THE

VETERINARY JOURNAL

AUGUST 1900.

Royal College of Veterinary Surgeons.

A SPECIAL meeting of the Council of the Royal College of Veterinary Surgeons was held at 10 Red Lion Square, London, W.C., on Friday, the 6th inst., for the election of officers for the ensuing year—Mr. Fraser, President, in the chair. The other members present were—Professors Dewar, James M'Call, M'Fadyean, Penberthy, and Pritchard, General Sir Frederick Fitzwygram, Vet.-Col. Lambert, Messrs. Abson, Byrne, Carter, Cope, Dollar, Hartley, Lawson, Locke, Mason, Mulvey, Simpson, Trigger, Villar, Wartnaby, Winter, and Wragg.

Letters of apology for non-attendance were received from Professor M'Call, Professor Edgar, Mr. Barrett, and Mr. Bower.

ELECTION OF PRESIDENT.

Mr. SIMPSON moved that Mr. A. C. Cope be elected President for the coming year. He was well known to the whole of the profession, and his abilities had been proved. His election would give universal satisfaction.

Mr. HARTLEY seconded the motion, which was carried by acclamation.

The retiring President, Mr. Fraser, then vacated the chair in favour of Mr. A. C. Cope.

The PRESIDENT (Mr. Cope) expressed his great gratification and appreciation of the honour conferred upon him by his election. He feared it was somewhat unmerited, although he took a deep interest in the welfare of the profession, professionally, financially, and socially. At the end of his term of office he hoped to hand the presidency on to his successor with the honour due to so important a post.

Mr. TRIGGER then moved a vote of thanks to the retiring President. They highly appreciated the admirable manner in which Mr. Fraser had conducted the business of the Council; he was elected to the chair with the full confidence of the Council, and vacated it with that confidence absolutely unshaken.

Mr. WRAGG, in seconding the motion, said he had been closely connected with the President during his year of office, and could testify that he had carried out his duties in a most exemplary manner.

The motion was carried unanimously.

Mr. FRASER, in thanking the Council, said he had not realised his ideal of what a President should be, but had spent a very pleasant year of office. He had received from the Council and profession a kindness and support for which he felt very grateful. He congratulated Mr. Cope on the position he now occupied, and which he felt sure he would adorn. Mr. Cope would not only serve them well, but would assist them in promoting the interests of the profession in every respect.

Election of Vice-Presidents.

On the motion of Mr. Hartley, seconded by Mr. Mason, the following gentlemen were appointed Vice-Presidents :—Professor Dewar, Messrs. Carter, Fraser, Lawson, Locke, and Simpson.

Election of Treasurer.

Mr. Mulvey moved, and Mr. Locke seconded, the re-election of Mr. Wragg as treasurer. This was carried by acclamation.

Mr. Wragg, in returning thanks, said that according to some reports it appeared the College was getting into somewhat troublous times. It had been said that the finances were not in such a good state as they were some years ago. He, however, was not so pessimistic about it as some people. He hoped they had passed through the crisis, and that they would soon return to their normal state. He thought the falling off in the candidates for the Fellowship Degree had had a great deal to do with the reduction of the balances. If more gentlemen could be induced to enter for the Fellowship examination, the funds would be greatly benefited.

Election of Secretary and Registrar.

Mr. Fraser, in proposing Mr. Hill's re-election as Secretary and Registrar, wished to acknowledge the assistance which Mr. Hill had rendered him during his term of office. He enjoyed the thorough confidence of the Council.

Professor Pritchard seconded the motion, which was carried unanimously.

Mr. A. W. Hill (Secretary), in thanking the Council for his re-election, said that his best endeavours should always be used in following the dictates of the Council and the profession.

At the conclusion of the special meeting a quarterly meeting was held—Mr. A. C. Cope occupying the chair.

The Secretary read the obituary list.

Mr. Trigger thought one name in the list commanded consideration, not only from the fact that the gentleman had attained patriarchal years and was practically the father of the profession, but that he had held almost all the important positions which could be held by a member of the profession, viz., the late Mr. Pritchard, of Wolverhampton. Mr. Pritchard devoted his life to the interests of veterinary science, and won for himself the esteem and regard of every member of the profession. He proposed that a letter of condolence be sent to the family of the late Mr. Pritchard, stating in the highest terms the Council's appreciation of his sterling character and the high regard in which he was held by the members of the veterinary profession throughout his very extended career.

Mr. Wragg seconded the motion, and it was agreed that a letter should be sent to the family of the late Mr. Pritchard conveying the Council's condolences.

The Secretary read the following letter from the War Office, dated June 20th :—

"Sir—I am directed by the Secretary of State for War to advert to your letter of the 22d August last, in which you submitted certain proposals

for the improvement of the position of officers of the Army Veterinary Department. Lord Lansdowne has, during the interval which has elapsed since the receipt of your letter, repeatedly had under his consideration in consultation with his military advisers the important points which your letter raises. The pressure of work, however, in this office since the beginning of the war has been so great as to render it impossible to arrive at a satisfactory settlement of the matter. As matters now stand, his Lordship thinks that it will be preferable to await the conclusion of the war before giving the question further consideration. This course will admit of the experience of the working of the Department which has been gained during the war being taken into account to an extent that would be impossible now, when reports made by the veterinary officers in South Africa have not yet been received.—I am, Sir, your obedient servant,

"A. H. KNOX."

Mr. SIMPSON thought it was difficult to know how to deal with such a letter. It was respectfully worded and should be respectfully received, but before any vote was taken the members should call to mind the last Council meeting, when he withdrew a resolution which he intended moving in consequence of information which came to his knowledge that the War Office was prepared to deal almost immediately with the question. Mr. Wyndham in the House of Commons said in answer to a question of Captain Norton's a very short time before April, that the question was under the consideration of the War Office, and that an answer would shortly be given. The veterinary profession had been led to believe by the War Office that some alteration would be made in regard to the Army Veterinary Department. After all those promises which had been wrung from the Under-Secretary of State for War in the House of Commons, what did they find? In answer to a further question of Captain Norton on the 5th inst., asking what decision had been arrived at with regard to the granting of military titles without prefix to officers of the Army Veterinary Department, Mr. Wyndham said that it had been decided to await the conclusion of the war in South Africa before coming to a decision. He (Mr. Simpson) did not hesitate to say that the profession had been lulled to sleep by the promises which had been made. They had been asked to keep quiet because the War Office had a difficult task in carrying on the war, and now that the war was within measurable distance of terminating they were again told they must wait. He moved that the letter lie on the table.

Mr. ABSON seconded the motion.

Professor M'FADYEAN, in the interests of the Army Veterinary Department, asked Mr. Simpson to withdraw his motion, for to be in any way disrespectful to the War Office would not be likely to promote what the profession desired.

Mr. SIMPSON said, that as his desire was to obtain some benefit, not only for the Army Veterinary Department, but the proper recognition of the profession as a whole, he would accept Professor M'Fadyean's suggestion and withdraw his proposition.

Professor M'FADYEAN proposed that a letter be written to the War Office acknowledging the receipt of its letter of the 26th June, and expressing a hope that a favourable reply would be received at an early date.

Mr. LOCKE seconded the proposal, which was agreed to.

The CHAIRMAN stated that a letter had been received from the Royal

Institute of Public Health stating that a Congress would be held in Aberdeen, and asking the College to send a delegate to attend it.

Mr. TRIGGER suggested that a courteous reply be sent stating that the Council hoped that a member would be able to attend.

Mr. WINTER thought it would be desirable for the Council to ensure some fitting recognition of the veterinary section at the Congress. He had attended the Blackpool Congress as a delegate, and there the veterinary section had been practically shelved. Instead of being made welcome they had been shoved into a hole and corner place at the tail-end of the proceedings.

Mr. CARTER understood that better treatment had been promised this year.

Mr. SIMPSON thought it might perhaps have a healthy effect if the Council declined to send a delegate this year by way of a mild protest, and he therefore proposed that a delegate be not sent.

Mr. WARTNABY seconded the proposal.

Vet.-Col. LAMBERT was of opinion that the profession should not cut itself off from such institutions simply because one body last year did not appear as courteous as it was thought desirable.

Mr. FRASER accorded with Colonel Lambert that the profession would be doing a foolish thing to cut itself adrift from these societies. By sending a delegate this year the profession would be probably more courteously treated in the future and its position improved.

Mr. ABSON thought that the treatment which had been received at Blackpool was not so much the fault of the Institute of Public Health as that of the Local Secretary. Representations had been made from two or three societies asking that better facilities should be given at the coming Congress, and he thought there would be no cause of complaint this year.

Mr. SIMPSON said that he had no idea that a formal representation had been made to the Institute, otherwise he should not have made the proposal he had done. Under those circumstances he asked to be allowed to withdraw his motion.

Mr. HARTLEY hoped the Council would see its way to make arrangements so that it should be directly represented this year at the Congress. The Council, he thought, should send delegates as often as it was invited.

The CHAIRMAN asked if it was the desire of the members that a delegate should be sent to represent the Council at the Congress.

This proposition having been agreed to,

Mr. MULVEY moved that Professor Williams (Senior) be asked to represent the College at the Congress.

Mr. SIMPSON seconded the motion, which was agreed to.

Mr. ABSON stated that both Mr. Villar and himself would be attending the Congress as representatives of local societies, and would be most glad to support Professor Williams on the occasion.

The SECRETARY read a letter from Mr. Frew, one of the Glasgow students, on behalf of himself and fellow-students, asking if an examination under the three years' course would be held at Christmas.

Mr. MULVEY said that if the resolution of which he had given notice was carried at the next meeting of Council, there would be no examination at Christmas under the three years' course.

Professor JAMES M'CALL thought that the students were placed in a very awkward position, and it was very hard lines for them not to know for

three months whether there was to be an examination at Christmas or not. He proposed that the examination be held at Christmas.

Professor PRITCHARD seconded the motion. It was, he said, a matter of contract between the pupil and the College, and the College had no right to break its half of it.

Mr. DOLLAR said that on page 66 of the Register would be found the following statement—"The foregoing bye-laws, 60 to 72 inclusive, shall not apply to any student attending at a recognised veterinary college or school on or before the 30th January 1893, but such students shall be subject to the old regulations which are stated in schedule 3." That being the case, the contract which was understood when the student entered was only capable of determination either by the voluntary retirement of a student from the examinations owing to his becoming convinced that he could not pass them, or by the students who were at the College before the 30th January 1893 ceasing to exist. The justice of that was evident when it was remembered that a student had to make his arrangements on the basis of the bye-laws which existed at the time he entered the profession. A student began by paying a considerable sum of money for his tuition, and it would be monstrous if, after having spent several hundreds of pounds in obtaining his knowledge, he should be refused examination at, say, three months' notice, as seemed to be suggested by what had fallen from Mr. Mulvey. If such a step were contemplated he thought very long notice should be given.

Mr. MULVEY pointed out that notice was given some two years ago.

Mr. DOLLAR accepted Mr. Mulvey's statement, but he should like to ask the nature of the notice. He was aware that a resolution of the Examination Committee was brought before the Council, but it had never been carried any further, and had not become a bye-law. It was therefore only a pious expression of opinion on the part of the Examination Committee, and it was not in any way binding either on the Council or on the students. Inasmuch as no notice whatever was taken of that resolution by the Examination Committee in its subsequent dealings with the students or by the Council, it was practically non-existent. It was therefore not a reply to the arguments he was bringing forward to say that the Council intended to disqualify these students from further attendances or to refuse to examine those who presented themselves; it was necessary to give at least a year or two's notice, and even if that were done he could not help thinking that there would be some ground for dissatisfaction on the part of the students, if not for legal proceedings against the College. Possibly some reasonable agreement could be arrived at, but that these men should be refused any examination without any notice whatever, or after three months' notice, seemed to him to be a very grave injustice, against which they might very reasonably enter the strongest possible protest.

Mr. THATCHER said that as he understood the suggestion it was not to refuse the students' examination altogether, but simply to change them from the three years' course to the four years' course.

Mr. DOLLAR said that that was just as truly refusing them as refusing to allow them to be examined at all, because it was altering the standard which by an existing bye-law had been guaranteed to them.

Professor DEWAR endorsed every word that had fallen from Mr Dollar, and pointed out the hardship that would be inflicted upon students who had not passed the examination. If Mr. Mulvey's motion was carried there

would be no examination at Christmas, and the students would have to join under the four years' course. Instead of having to study for only three months they would have to study for two full sessions, and spend another £150 it might be, and lose one and a half year's more time.

Mr. SIMPSON said that even if the resolution of which Mr. Mulvey had given notice of motion were passed at the next meeting, it need not necessarily immediately come into operation. In that way the difficulty, which might at first sight appear to be a great one, could be got over. A resolution of the Council that the alteration should come into operation at a certain date would, he thought, meet the difficulty; under the circumstances he would support the proposal that the students be permitted to present themselves for examination at Christmas.

Professor M'FADYEAN did not think there was any serious reason to stop the examination. The only reason for discontinuing it would be that the College was incurring a serious loss, but in his opinion the examinations might be so arrranged that they could be continued for the next half century without any loss. There was, he believed, a trifling loss incurred through the error of not constituting a board for examining students under the three years' course entirely out of the examiners for class "D." If that were done nothing would be lost. He did not think the Council should be guilty of inflicting the slightest hardship on students when no loss was being incurred. Lest any one should think that the school with which he was connected was interested in the subject, he would say that he was not. As far as he was aware, there was only one student at the Royal Veterinary College who entered under the three years' system, and had not completed it. He was quite sure that if all the posts available in the final examination under the three years' system were filled up out of the examiners in class D, there would be very little trouble in having the examination, and there would practically be no loss to the College.

Mr. VILLAR said he understood that there were only a very few students left to go up for the examination, in which case the expense would be very small. If the College was to err at all, it should err on the right side and act generously to the students. The Council was in the position of either making these students or entirely marring their future prospects in life. As the cost would be so small, he would propose that the examination be held.

Professor M'CALL's motion that an examination be held at Christmas for the men referred to was then put and agreed to.

PRESENTATIONS.

The following presentations were announced:—

To the Library.—"Veterinary Journal" for three months; "Veterinarian" for three months. Annual Statistical and General Report of the Army Veterinary Department for 1899. Annual Reports of Proceedings, Board of Agriculture, for 1899. Annual Report of the Imperial Bacteriologist with Tables, &c., 1897-8. Canine and Feline Surgery. Merck's Manual of Materia Medica.

To the Museum.—A mulberry calculus taken from the bladder of a Shetland pony, presented by Mr. Sandy.

Mr. LOCKE moved that a vote of thanks be accorded the donors.

Mr. LAWSON seconded the motion, which was agreed to.

Finance Committee.

Mr. Trigger read the report of the Finance Committee and moved its adoption. It appeared from the report that the liability amounted to £274, which the Committee recommended should be discharged. The report further recommended that the attention of the Special Committee which was considering the question of finances be specially directed to the expenses incurred at the Scotch examinations.

Mr. Locke seconded the motion for the adoption of the report, which was carried.

Special Finance Committee.

The Secretary read the report, which stated that after a careful examination of the financial position of the College it had appointed a smaller committee to go further into the subject.

The motion for the adoption of the report was agreed to.

Registration Committee.

The report stated that the Veterinary Surgeons Amendment Bill had passed the third reading of the House of Commons, that it had passed through the Committee on Law without amendment, and that the next step would be to obtain some one to take charge of it in the House of Lords. The Committee desired to place on record its appreciation of the great services rendered by Sir Thomas Carmichael in successfully conducting the Bill through the House of Commons. The report further stated that a letter had been received from Veterinary-Colonel Rayment and other officers of the Veterinary Department serving in South Africa, stating a charge against a member, and it was resolved that he should be summoned to appear before the Committee to show cause why his name should not be removed. The Committee recommended the Council to restore the name of Mr. John Howard to the register, Messrs Lawson and Carter having given their personal testimony of Mr. Howard's good behaviour. The Committee also recommended the restoration of Mr. Pettigrew's name, he having furnished evidence of good conduct in accordance with the Council's requirements. The Committee further recommended the restoration of Mr. Cunningham's name on the usual terms. Several cases against members for advertising had been under consideration and the usual undertakings asked for.

Mr. Simpson, in moving the adoption of the report, said that a letter had been received in which it had been suggested that Lord Ribblesdale, a nobleman who took a great deal of interest in the veterinary profession, should take charge of the Bill in the House of Lords.

Mr. Mulvey seconded the motion, and the report with a verbal amendment was adopted.

Examination Committee.

Mr. Mulvey read the report of the Examination Committee and moved its adoption. It appeared from the report that Messrs. Sykes and Souter had been instructed that an examination for the practical three years' course (C) would take place next July, and Mr. Richardson, who asked to be allowed to go up in July, was referred to bye-law 68, but that gentleman had since written to say that he would prefer to present himself

at Christmas should there be an examination. The Committee had decided that Mr. Hern should be supplied with a copy of the marks obtained by his son at the May examination in Scotland, and that a letter from Mr. Frew asking if there would be an examination under the three years' course be referred to the Council. The secretary was instructed to inform Mr. Oliver that the paper submitted would not entitle him to registration as a veterinary student. The Committee had carefully considered Professor Dewar's motion, and recommended that the subject be deferred until its next meeting. The whole of the students' certificates had been carefully considered, and with two exceptions accepted.

Mr. LOCKE seconded the motion for the adoption of the report, which was agreed to.

LIBRARY COMMITTEE.

The SECRETARY read the report of the Library Committee, which recommended that the bookcase on the right-hand side of the library be devoted to books presented by Dr. George Fleming, and that a brass plate be placed there indicating from whom they were received.

On the motion of Mr. FRASER, seconded by Mr. MASON, the report was adopted.

REPORT FROM THE COURT OF EXAMINERS OF THE MAY EXAMINATIONS IN SCOTLAND.

The report of the Court of Examiners, on the motion of Professor PRITCHARD, was taken as read.

REPORTS FROM THE EXAMINERS AND DELEGATES.

On the motion of Mr. MULVEY, seconded by Mr. SIMPSON, the reports of the examiners and all questions connected with the examinations were referred to the Examination Committee.

APPOINTMENT OF COMMITTEES.

The following Committees were appointed :—

President and Member of all Committees.

A. C. Cope.

Registration Committee.

Mr. Abson.
Mr. Barrett.
Mr. Bower.
Mr. Byrne.
Mr. Carter.
Mr. Dollar.
Professor Edgar.
Mr. Fraser.
Mr Hartley.
Mr. Lawson.
Mr. Mason.
Professor M'Call.
Professor M'I. M'Call.
Mr. Mulvey.
Professor Penberthy
Professor Pritchard.
Mr. Simpson.
Mr. Trigger.
Mr. Wartnaby.
Professor W. O. Williams.
Mr. Winter.
Mr. Wragg.

Examination Committtee.

Mr. Allen.
Mr. Barrett.
Mr. Carter.
Professor Dewar.
Colonel Duck.
Professor Edgar.
Colonel J. D. Lambert.
Mr. Locke.
Professor J. M'Fadyean.
Professor M'Call.
Professor M'I. M'Call.
Mr. Mulvey.
Professor Penberthy.
Professor Pritchard.
Mr. Simpson.
Mr. Villar.
Professor W. O. Williams.
Mr. Winter.
Mr. Wragg.

Parliamentary and General Purposes Committee.

Mr. Allen.
Mr. Barrett.
Mr. Bower.
Mr. Byrne.
Colonel Duck.
Mr. Dollar.
Professor Edgar.
Mr. Fraser.
Mr. Hartley.
Mr. Mason.
Professor M'Call.
Professor M'I. M'Call.
Professor M'Fadyean.
Mr. Mulvey.
Professor Penberthy.
Mr. Simpson.
Mr. Trigger.
Mr. Villar.
Mr. Wartnaby.
Professor W. O. Williams.
Mr. Winter.
Mr. Wragg.

Finance Committee.

Mr. Allen.
Mr. Abson.
Mr. Barrett.
Mr. Bower.
Mr. Dollar.
Professor Edgar.
Mr. Fraser.
Mr. Lawson.
Mr. Locke.
Mr. Mason.
Mr. Mulvey.
Professor Penberthy.
Mr. Simpson.
Mr. Trigger.
Mr. Villar.
Mr. Wartnaby.
Mr. Wragg.

Library and Museum Committee.

Mr. Allen.
Mr. Barrett.
Mr. Bower.
Mr. Carter.
Mr. Dollar.
Professor Edgar.
Mr. Hartley.
Professor M'Fadyean.
Mr. Mulvey.
Professor Penberthy.
Mr. Wragg.

Publication Committee.

Mr. Barrett.
Mr. Dollar.
Professor Edgar.
Mr. Fraser.
Professor M'Call.
Professor M'I. M'Call.
Professor M'Fadyean.
Mr. Mulvey.
Professor Penberthy.
Mr. Simpson.
Mr. Villar.
Professor W. O. Williams.
Mr. Wragg.

Secretary and Registrar.
Arthur W. Hill.

Election of Auditors.

Messrs. Warner and Woodger were unanimously re-elected as auditors.

Walley Memorial Examination.

On the motion of Professor Dewar, seconded by Mr. Mason, it was resolved that the Walley Memorial Examination be held on Friday, 5th October.

Dates of Council Meetings.

October 9th and 10th, January 10th and 11th, and the second Thursdays and Fridays in April and July next year, were fixed as the dates for the future Council meetings.

Dates of Examinations.

Professor Dewar moved that the Christmas written examination in England and Scotland be held on Friday, December 14.

Mr. Mason seconded the motion, which was agreed to.

The oral and practical examination at the London College was fixed to commence on Monday, December 17th. On the motion of Professor Dewar it was resolved that the written examination in May in Scotland be fixed for Friday, 17th May 1901, and that the oral and practical examination begin on Tuesday, the 21st. It was also resolved that the July written examination be held on Friday, 12th July, and that the oral and practical examination begin in London on Tuesday, 16th July.

Mr. MULVEY said that, in consequence of the rooms not being secured early this year, the date of the examination had to be altered. He would therefore move that it be an instruction to the Secretary to secure rooms for the written examination early.

The motion was seconded by Mr. MASON and agreed to.

FELLOWSHIP EXAMINATION.

A ballot for the appointment of an Examiner for the Fellowship Degree in place of Mr. W. Duguid (deceased) was taken with the following result :— Mr. J. Malcolm, 11 ; Professor Shave, 8 ; Mr. R Moore, 2.

The PRESIDENT declared Mr. Malcolm to be duly elected.

NOTICES OF MOTION.

Mr. TRIGGER gave the following notice of motion :—"That no examination shall be held in any class at any centre unless six candidates are eligible and present themselves for the examinations to be held at such centre."

Mr. DOLLAR gave notice that at the next meeting of Council he would propose certain standing orders for the regulation of meetings of Council. They were fifty in number, but inasmuch as they would have to be suspended, he presumed the Council would excuse the formality of reading them.

Professor JAMES M'CALL handed in the following notice of motion :— "That the Council of the Royal College of Veterinary Surgeons make arrangements to conduct a special preliminary educational examination for veterinary students."

VOTING PAPERS.

Mr. CARTER called the attention of the Council to a letter which had appeared in the *Record* from Mr. Ironsides of Nairn, complaining that he generally received his voting papers on the day after they should have been delivered in at Red Lion Square.

The SECRETARY stated that he had looked the matter up and had found that all the voting papers had been posted at 3.30 on a Thursday afternoon. He had explained the matter to Mr. Ironsides, who had seemed satisfied with his explanation.

Mr. DOLLAR pointed out that no formal complaint had been brought before the Council. The business-like way to have dealt with the matter would have been for Mr. Ironsides to write a letter to the Council and to enclose with it the covering envelope, which would bear a stamp, stating not only the date on which the letter was posted, but also the hour and place. There could then be no further questions as to whether the College officials had properly carried out their duties. In the absence of such evidence he thought the Council should not go into the matter.

Mr. MULVEY asked what number of letters had been received through the dead letter office.

The SECRETARY said that according to his recollection none had been received.

Mr. MULVEY asked if the letters had been posted with penny stamps on.

The SECRETARY stated that this was the first occasion that the voting papers had gone out with halfpenny stamps.

Mr. MULVEY said that that accounted for the authorities not returning any of the letters.

Mr. WRAGG said he had read the letter referred to by Mr. Carter, and had intended to bring the matter before the Finance Committee that morning, but it slipped his memory.

The CHAIRMAN said that in his opinion it was very undesirable to take notice of any remarks that appeared in newspapers. If any member felt himself aggrieved in any way, his proper course was to write direct to the Council, when his complaint would be considered and a fitting reply sent.

After some discussion it was resolved, on the motion of Mr. TRIGGER, seconded by Mr. MULVEY, that the matter be referred to the Finance Committee.

Mr. ABSON moved a hearty vote of thanks to the President for his conduct in the chair.

Mr. MULVEY seconded the motion, which was agreed to.

THE MAY EXAMINATIONS IN SCOTLAND.

At meetings of the Board of Examiners held in Edinburgh and Glasgow on May 18th for the written examination, and on and between the 21st and 28th for the oral and practical examinations, the following gentlemen passed their final examination and were admitted members of the Royal College of Veterinary Surgeons :—

THREE YEARS' COURSE.

DICK COLLEGE.——Messrs. J. R. Atkins, J. Dalrymple, N. Roberts, A. F. Walshe.
NEW COLLEGE.—Mr. J. S. Drabble.
GLASGOW COLLEGE.—Mr. H. Cameron.
LONDON COLLEGE.—Mr. F. Moore.

FOUR YEARS' COURSE.

DICK COLLEGE.—Messrs. J. E. Cockcroft, C. A. W. Cunningham,* R. A. Edwards, G. Garden, W. Hepburn,* T. Hogg,* W. S. King, R. B. Littler, T. Nunan, C. Steel.*
NEW COLLEGE.—Messrs. A. Ashworth,* W. G. Burndred,* J. P. Dunphy, H. E. Martin, B. Runciman,* T. Runciman, C. R. Twist.
GLASGOW COLLEGE.—Messrs. J. P. Small, J. Baird.
LONDON COLLEGE.—Mr. J. E. L. Still.

The following passed their Third Examination :—

NEW COLLEGE.—Messrs. H. Barrow, F. Dunning, W. Elder, C. Harrison, H. B. Kauntze, H. H. Lord, J. Latta, C. Pitts, M. H. Sowerbycoo, A. A. Walker, G. T. Willows, J. D. C. Ward.
DICK COLLEGE.—Messrs. P. Braid, R. Bryden, W. Dunstan,* T. Harper, W. Harris, W. Jelbart, J. T. Keall,* W. Nairn,* J. S. Nimmo,* J. P. O'Reilly, J. Warwick.
GLASGOW COLLEGE.—Messrs. A. P. Logan, W. G. Forbes, W. M. Ferguson,* A. M'Dowell, J. H. MacLaren, A. Logan, J. Allan, F. B. Beck, J. Danskin.

The following passed their Second Examination :—

NEW COLLEGE.—Messrs. G. T. Anderson, W. Hepburn,* R. Hayes, W. D. Lindsay, T. Walker.
DICK COLLEGE.—Messrs. W. Colebatsh,* J. Forbes,* A. C. Bowden, E. Dunstan, H. B. Hiles,* W. Munslow, W. Robertson,* J. D. Whitehead, J. D. Whitty,* H. Yeamans.
GLASGOW COLLEGE.—Messrs. H. G. Rogers, J. M'Farlane, G. W. Weir, N. H. MacAlister,† J. F. Craig,† J. Wallace.*

The following passed their First Examination :—

NEW COLLEGE.—Messrs. E. Berry, S. Elley,* W. Gillespie,* J. K. Leyland, P. Reilly, C. H. Wadlow.

DICK COLLEGE.—Messrs. A. H. Andrew,† W. K. Barron,* C. Cameron, J. G. Cattell,* W. J. Devine,* J. Donaldson, J. Henderson, A. B. Howe, M. J. Herriott, H. L. Jones,† W. W. Kerr, R. Montgomery,* E. J. O'Riordan, J. D. Powley, D. Rubaghati,† J. H. Ripley,* W. C. Simson, H. W. Stevens, S. J. Thomas, H. M. Williams.

GLASGOW COLLEGE.—Messrs. J. W. Tait, P. F. Tubridy, R. Beckerton, J. Taylor, H. M'Intyre, F. M'Shane.

Marked thus * passed with 2d Class Honours.
" " † " " 1st " "

R. RUTHERFORD, F.R.C.V.S.,
Sec. Board of Examiners.

GENERAL SIR FREDERICK FITZWYGRAM'S PRIZES, 1899.

FIRST PRIZE, £50.—Mr. W. G. Burndred, M.R.C.V.S., of Henley.
SECOND PRIZE, £30.—Mr. T. Runciman, M.R.C.V.S., of Ely, Cambridgeshire.

Both gentlemen are graduates of the New Veterinary College, Edinburgh.

Original Papers.

VARIOLA, VACCINIA, AND THE PREPARATION OF VACCINE LYMPH.[1]

BY JNO. B. WOLSTENHOLME, F.R.C.V.S., F.R.M.S.

MR. PRESIDENT AND GENTLEMEN—Responding to the request of the head of our Association, I have ventured to introduce this subject. In so doing it is my intention to give the briefest possible outline of the subject, and to supplement that with the exhibition of a number of lantern slides.

It is further necessary to add that the title suggested itself to me on hearing my friend Mr. Sykes read a paper on the same subject before the Manchester Microscopical Society, and I desire to express my indebtedness and thanks to him for the loan of slides, the use of certain reports to the Local Government Board, and for his kindness and courtesy in various other ways.

Variola in man is an eruptive fever. It is infectious during the life of the patient, and also from the dead body. It is communicable to man by inoculation, but cannot be transmitted to animals by infection or by inoculation.

It is a disease which has been recognised for a long period, and practically the sum total of our present knowledge has been gained exclusively by clinical study. It is by this means we know that a subject, having once passed through the disease, is much less liable to contract it again than one who has not had it. It had also been observed long ago that those who contracted the disease by inoculation had as a rule a milder and less fatal form.

[1] Read before the Lancashire Veterinary Medical Association, June 21st, 1900.

The mortality of smallpox had driven many of the people of the East to resort to inoculation as a protection, and it was to this end that Lady Mary Wortley Montagu introduced it into England in 1721. As time passed and experience gathered, it was found that inoculation, whilst it protected somewhat those who were operated on, yet it spread the disease extensively, for each person so inoculated became a centre of infection, and distributed it to many who came near them or in contact with infected clothing, &c. Smallpox inoculation was prohibited by Act of Parliament in 1840.

Cowpox in the natural condition is a disease peculiar to the female of the bovine species during the period of lactation. It is characterised by a typical eruption on the teats and udder. It is not infectious, but may be transmitted by inoculation.

As to the relationship between variola and vaccinia, the greatest divergence of opinion exists between experts. I think the case may be best stated by making one or two quotations. Thus, Dr. S. Moncton Copeman, Medical Inspector to H.M. Local Government Board, says that "It may now be definitely stated that smallpox lymph, by passing through the system of the calf, can be so altered in character to become deprived of its power of causing a generalised eruption, while inducing at the site of inoculation a vesicle indistinguishable from a typical vaccine vesicle, and, more important still, that when transferred again to man it has by such treatment lost its former infectious character. Such being the case, it may fairly be asserted that cowpox — or rather that artificially inoculated form of the disease which we term 'vaccinia'—is nothing more nor less than variola modified by transmission through the bovine animal."

On the other hand, Dr. Crookshank, whilst admitting that by "judicious selection" it is possible, as stated by Copeman, to procure a lymph which "is deprived of its infectious properties, and produces on the arm the physical characters of an ordinary vaccine vesicle." This, he says, "has been regarded as a proof of the identity of smallpox and cowpox, but it is not so. Variola and cowpox are not the only diseases caused by a virus which can be attenuated until only a vesicle is produced with the characters of an ordinary vaccine vesicle." (*Vide* cattle plague, sheep-pox, and horse-pox.) "Cowpox has never been converted into human smallpox, and in their clinical history and epidemiology natural cowpox and human smallpox are so different that the comparative pathologist is no more prepared to admit their identity than he is to admit the identity of cowpox and sheep-pox, or smallpox and cattle plague."

After listening to two so divergent opinions, it will be well to quote from the Final Report of the Royal Commission on Vaccination issued in September 1896. This Commission was composed of men eminent in medicine, law, and collateral sciences, and had the advantage of hearing the views of Copeman, Crookshank, and others on the question. The Report says:—

"It may at once be stated that while cowpox is readily transferred from the cow to man, and back again from man to the cow, the disease in man being identical with that in the cow, smallpox cannot be transferred from man to cow so as to give rise to a disease in the latter identical in its features with the smallpox of man. Nor can cowpox be so transferred to man as to give rise in him to smallpox. The two diseases are not in this sense convertible."

As to the formation of a vaccine vesicle in the cow from inoculation with smallpox matter, the Report says:—"Taking all the various facts into consideration, we seem led to the provisional conclusion that, under certain conditions, the tissues of the cow are able to transform smallpox into vaccine. . . . . There is still room for much inquiry; meanwhile it may be said that in any case the evidence in favour of a possible transformation of a smallpox into vaccine is sufficiently strong to remove the force of the theoretical objection to the power of vaccination to secure immunity towards smallpox, on the ground that the two diseases are absolutely distinct."

As to the bacteria which have been discovered in lymph from the vesicles or pustules of smallpox, cowpox, and vaccinia, they are numerous, and include the ordinary saprophytic group, together with certain of the pus-producing organisms. In neither of the diseases has a definite producing organism been isolated, and thus the exact nature of the contagium remains obscure.

As you are well aware, the clinical acumen of Jenner noted and verified the observations of certain dairy folk as to the modifying and protecting influence which had been exerted on a person who has contracted cowpox when that person was exposed to the contagium of smallpox. Jenner commenced his experiments in 1796 by inoculating people directly from the cow; two years later he commenced to vaccinate, *i.e.*, to take the lymph from an artificially produced vesicle and use it for another series. In other words, he commenced arm to arm vaccination. In connection with these experiments it is well to note that Jenner, before he began to use cowpox lymph, had practised smallpox inoculation. Many of the persons he inoculated with cowpox lymph and vaccine lymph were tested not only in the natural way during epidemics of smallpox, but by being directly inoculated with smallpox virus.

As time advanced and experience accumulated, it was found that the lymph taken directly from cowpox vesicles was exceedingly virulent, and that not infrequently serious results of an inflammatory character supervened. It was observed that, in the arm to arm mode of propagation, the disease ran a much milder course, and thus vaccination, as against cowpox inoculation, became the usual method.

This means of lessening the mortality from smallpox has so appealed to the legislators of many countries that the practice of vaccination has been enforced by law; but at the same time it requires very little medical or surgical knowledge to know that it is not possible to puncture or scratch through the skin without running a definite risk of the wound being or becoming poisoned. Amongst the grave forms of poisoning may be noted erysipelas and the various septic diseases. Syphilis has been introduced with the vaccine, and some fear that tubercle and leprosy may also be conveyed. On account of these definite risks, as well as other reasons in the nature of doubt as to its efficacy, or from sentiment, a section of the community has placed itself in antagonism with the majority.

Experiment has shown that if a calf be inoculated with the virus of cowpox, the resulting vesicles are of the small mild character as those raised by the arm to arm method, and observation proves that they are equally successful in producing vaccination when introduced into the human subject. Lymph produced from the calf is now superseding that raised by arm to arm vaccination, for the reasons—first, that the risk from

the possibility of syphilis and leprosy are excluded, and that the same from tubercle is avoided by a post-mortem examination of the calf before the lymph is used.

Of course lymph from the calf is and must be liable to contamination with the other numerous micro-organisms, such as are found in lymph from the arm. In connection with this aspect of the question, a new and most important means has been adopted to free and purify lymph of them. Amongst the many substances which have the power to inhibit the growth and destroy micro-organisms are included certain oils and glycerine. As a result of long-continued experiments, Dr. Copeman announced in 1891 that the admixture of glycerine to vaccine lymph, with subsequent storage in a particular manner, had the effect of destroying all the micro-organisms in lymph to which any untoward or baneful result might be attributed; whilst he declared at the same time that the vaccinal efficiency was unimpaired, nay, increased. This was a most remarkable statement, yet the accumulation of evidence, both at home and on the Continent, serves only to prove it.

The method adopted to prepare and test the lymph is as follows:— Vesicle pulp from a calf is weighed, and to it is added a certain quantity of a 50 per cent. solution of glycerine in water. I say a certain quantity, because a varying amount has been used. In the experiments cited by Dr. Copeman the pulp was diluted on different occasions with twice, with four times, and with fifteen times its weight of 50 per cent. glycerine and water, the strictest aseptic precautions being used. The emulsion is then drawn up into capillary tubes, sealed with the blow-pipe and stored.

A plate culture prepared from the newly made emulsion, on nutrient agar-agar, on being allowed one week to grow, showed at the end of that time many colonies of micro-organisms. A similar culture, made from a tube after one week's storage, showed a diminution in the number of colonies, and so on until at the end of one month's storage not a single colony could be found. This emulsion, on being used to vaccinate children, proved that it was very efficient.

I may add that the bacilli of tubercle and the streptococcus of erysipelas have been added experimentally to the lymph, and it is found that they are effectively destroyed in the process.

In this country there are a number of establishments where the process of calf lymph production goes on. They are private enterprises with the exception of that of the Government station in London. On the Continent both private and Government institutions exist, as with us.

The method varies somewhat in different places. At an institution in Paris female calves, from four to six months old, are used. They are fastened to a tilting table, and the part selected is shaved and rendered thoroughly clean. Superficial incisions, each about 1 inch long, are made in the skin of the abdomen, and glycerinated lymph is rubbed in. When the lymph has dried the calf is taken back to the stable. At this institution the lymph is collected on the sixth day.

In Brussels, at the Veterinary School, male calves are preferred. Here they make about 150 incisions, of from 2 to 3 inches in length, on the abdomen and scrotum.

In Berlin, incisions 18 to 24 inches in length, and very close to each other, are made. The lymph is collected on the fifth day.

At the Government establishment in England each calf serves to pro-

vide vaccine sufficient for 200 to 300 vaccinations, whilst in Berlin it is said one calf will suffice for no less than 15,000 vaccinations.

In some instances injection of tuberculin is practised before vaccination, but this seems unnecessary, as in all cases the cattle are killed and examined post-mortem as to their general health and freedom from tuberculosis, before the lymph is allowed to be distributed. On the Continent the calves after slaughter are sold for human food. I presume that the same custom appertains in this country, but I do not know.

On the protective value of vaccination in the human subject I do not propose to enter, and shall content myself with simply saying that the Report in 1896 of the majority of the Royal Commission on Vaccination finds it proven—

1. "That it diminishes the liability to be attacked by the disease" (*i.e.*, smallpox).
2. "That it modifies the character of the disease and renders it (*a*) less fatal, and (*b*) of a milder or less severe type."

A later clause in the Report says that "The beneficial effects of vaccinations are most experienced by those in whose case it has been most thorough. We think it may fairly be concluded that where the vaccine matter is inserted in three or four places, it is more effectual than when introduced into one or two places only, and that if the vaccination marks are of an area of half a square inch they indicate a better state of protection than if their area be at all considerably below this."

I have quoted this last conclusion to remark how imperfect the present vaccination law is as to its standard of efficiency. It is necessary that a medical man certifies that vaccination has been *successfully* performed, and he may legally do this if only *one* vesicle has been raised. The great majority of medical men believe with the Report that this is inefficient, and desire that a definite number of vesicles be required as a standard before they shall certify that vaccination has been successfully performed.

The Local Government Board have fixed a standard for the people vaccinator, and will not pay the fee unless he certifies that at least four vesicles have been successfully raised.

In some places the scruples and convenience of the public have to be met in various ways. Thus, in certain parts of Paris, the vaccinated calf is taken to the homes of the people, and sometimes vaccination is practised in the open street.

The following works have been used in preparing this paper:—

Dr. Crookshank's Bacteriology and the extracts from the Final Report of the Royal Vaccination Commission, as therein given.

Dr. S. Moncton Copeman on Smallpox, Vaccinia, and Vaccination, article in Allchin's Medicine, 1900.

Report to the Local Government Board on the preparation and storage of Glycerinated Calf Lymph, 1897.

Report to the Local Government Board on the Influence of Glycerine in inhibiting growth of Micro-organisms in Vaccine Lymph, 1898.

NOTE-TAKING AND CASE-REPORTING.

BY POPINJAY.

Do veterinary surgeons, as a whole, pay sufficient attention to note-taking and case-reporting? This is a question that has more than once suggested itself to me, and I am sorry to say the answer has invariably been in the negative. No one will for a moment deny that there are practitioners who conscientiously make notes of their cases, and when these are, in their estimation, sufficiently interesting, do the right thing by publishing them in one or other of our professional journals. But this class of veterinary surgeon is, unhappily, a very small one. The average man never takes a note, and if he does report a case, the circumstance is so unusual that he does not make the best of it, chiefly because he has no notes made at the moment of observation or within a reasonable time thereafter. Of course, it will be contended that note-taking occupies time, and that time to a busy practitioner is a very scarce and valuable commodity. This contention will be readily admitted; but is the time taken up really of necessity so very much? The notes need not be long, nor need they be couched in very elegant English. All that is required are a few facts which may be expanded into a readable paper should the case ultimately develop sufficient interest. Certainly there are many excuses for the man who is out seeing cases "from dewy morn to stilly eve." Naturally he cannot do much in a note-making way; and equally naturally, when he has a minute or two to himself, no one would grudge him a rest—even a nap. We may forgive the man who has driven miles during the day if he yields to Morpheus; but even busy men are not always busy; they have sometimes a slack time. Yet during this slack time most of them do not mend their ways in the literary line. Leaving the busy man out of count, however, there is still the great class of men with average practices; practices which do not consume the whole of their time; practices in which almost every day may be counted upon to yield an hour or two of leisure. And these are the practices in which interesting cases occur as often as in other and more exacting practices. Unfortunately for us as a profession, the average veterinarian, when he finds an hour or so not occupied with professional work, "cannot be bothered" by doing literary work. Unfortunately, I say, is this the case, for where is our literature to come from if not from the actual practitioners themselves? All will freely admit that the man in practice cannot find time to write books; but he can and must find the material from which books are to be compiled. Our periodicals are the only source from which real knowledge of what is being done by the profession can be obtained. It, therefore, behoves all and sundry to add their quota to what may be called the current professional literature of our periodicals. This is a duty we owe to our profession. Do we fulfil this duty? The answer will be found in the number of cases reported and the original papers published in the various veterinary papers. Is that number commensurate with the number of names on the Register of the Royal College of Veterinary Surgeons? I think not.

I heard the other day a very disgraceful reason for not publishing cases. A certain veterinary surgeon, not unknown to the profession at large, had adopted an uncommon form of treatment for a particular disease. The results were all that could be desired. When it was suggested to him that a very good paper might be written detailing the treatment and pointing out

its benefits, an objection was raised on the grounds that the other veterinary surgeons in the same town would adopt the method, and so obtain equally good results, and, of course, an equal amount of *kudos*. It is to be feared that this is not an isolated case. The benefits to the individual are considered before the good of the body corporate. *Satis verborum.*

TERMINATION OF THE ABDOMINAL AORTA IN THE HORSE —PRELIMINARY NOTE.

BY O. CHARNOCK BRADLEY, M.B.

For some time I have been convinced that the ordinary text-book description of the manner in which the horse's abdominal aorta terminates cannot be taken as quite accurately indicating the condition of affairs. If we refer to the works on veterinary anatomy with which our students are more familiar, we find that the impression received from them is that the aorta splits up into four vessels at its termination; or, in other words, that there is a quadrifurcation. For example, M'Fadyean (*Anatomy of the Horse*, p. 321) says:—"At the fifth lumbar vertebra it (the abdominal aorta) terminates in four branches, two diverging to each side." Chauveau makes a very similar statement—"Arriving at the level of the last intervertebral articulation, the posterior aorta terminates by a double bifurcation" (*Anatomie comparée des Animaux Domestiques*, 4me éditione, p. 603).

Now, any student making a dissection of the sublumbar region, and expecting to find the aorta behaving as his text-book leads him to anticipate, will be somewhat disappointed, for I am convinced that a true quadrifurcation is the exception and not the rule. Moreover, the authors I have quoted give illustrations which do not agree in detail with their written descriptions. From a careful examination of the subjects used in the practical anatomy class during the past two sessions, I have come to the conclusion that the wording should be modified, and that the illustrations indicate the average condition of affairs. I append outline sketches of the aorta as shown in the figures in three representative works on veterinary anatomy (figs. 1, 2, and 3). I have not as yet examined a sufficiently large number of specimens to be able to quote statistics, but the results obtained so far justify me in stating that the most common arrangement of the iliac arteries is shown in the accompanying outlines (figs. 4 and 5). It will be observed that after the origin of the external iliac arteries (*Aa. femorales*) there is a continuation of the aorta (for about an inch as a rule) to a bifurcation which results in the production of the internal iliac arteries (*Aa. hypogastricæ*). The exact origin of the circumflex iliac vessels is subject to much variation, but probably it is most commonly from the external iliac close to its origin (fig. 5). In not a few instances, however, these vessels spring directly from the aorta (fig. 4). A true quadrifurcation of the aorta (fig. 6) does occur, but we have not met with it at all frequently. A still rarer termination is as six vessels radiating from a common point (fig. 7); in this case the circumflex iliac arteries spring from the aorta close to the quadrifurcation.

In one instance (a female subject) we found that there were two common iliac arteries, each of which terminated in external and internal iliacs, and gave origin to a circumflex iliac branch (fig. 8). This arrangement must be very rare.

I have omitted all mention of the occurrence of a middle sacral

artery, as cases in which it has been present have been too few to found any conclusion upon.

As stated above, the number of specimens is as yet too small to enable one to state in figures the relative frequency of the various forms of termination. This is therefore merely a preliminary note, further observations being necessary.

FIG. 1.—Outline from M'Fadyean's *Anatomy of the Horse.* Plate XLV.

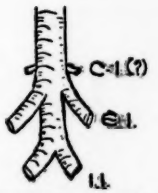
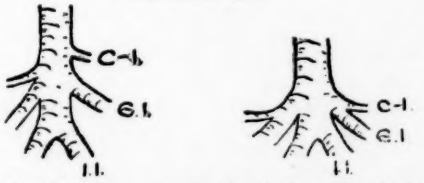


FIG. 2.—Outline from Chauveau's *Anatomie Comparée des Animaux Domestique.* Fig. 288.

FIG. 3.—Outline from Leisering's *Atlas der Anatomie des Pferdes.* (Baum & Ellenberger.) Taf. XXXVII. Fig. 1.



FIGS. 4 and 5.—Two common modes of termination, as found by the present writer.

FIG. 6.—A true quadrifurcation.

FIG. 7.—The aorta terminates in six branches—not a common form.

FIG. 8. The aorta terminates in two common iliac arteries. An uncommon form.

C-I = circumflex iliac artery.
E I = external iliac artery.
I I = internal iliac artery.
* (Fig. 8) = common iliac artery.

REMARKS ON SCABIES OF DOMESTICATED ANIMALS.[1]

BY PROFESSOR PENBERTHY, F.R.C.V.S.

PROFESSOR Penberthy in the first place said he must apologise for the misleading character of the heading which appeared on the agenda paper, and disabuse the minds of his hearers of any idea that he intended to attempt to cover the ground indicated by the title *Acariasis*, a subject to exhaust the known facts of which would entail a series of lectures. He merely wished to bring forward and elicit a discussion on some few points of present interest in connection with acariasis of the domesticated animals.

To the kind invitation of the President to read a paper the speaker had replied that he had nothing new to bring to the notice of the Society, nor time to prepare an essay. Up to the eleventh hour he had vainly hoped to have been excused, but excuses had not availed. His inability to resist the request of the President, for whom he had a great respect, and his desire to cement his long existing friendship with his fellows of the Midland Association, were responsible for his occupation of the position in which he then found himself.

The subject of acariasis was suggested to the Professor at a meeting of the Farmers' Club held in London on the previous week, when a paper on "Sheep Scab" was read by Professor Wallace of Edinburgh, who very properly insisted that in any attempt to eradicate this disease it was essential that those concerned should have an intimate and practical knowledge of sheep. In the discussion which followed the remarks of one or two speakers as to the ignorance of the veterinary profession on the subject were most appalling. It was this which specially influenced the speaker in bringing the subject before them on the present occasion. He was disposed to attach very great importance to the animal as well as the vegetable micro-parasites. The late Professor Spooner is credited with having said that if all the skin diseases of the horse were placed in a sack and shaken up they would come out as "mange." He (the speaker) would not go quite to that length, but he was inclined to think that parasitic skin diseases of the domesticated animals were more common even to-day than may be thought by some people. In bringing the matter before the Association, he thought it might help to disabuse the minds of those who really believed that veterinary surgeons did not understand the different forms of acariasis. It would at any rate indicate that they were interested in such matters.

The Professor then proceeded to direct attention to some of the more interesting characteristics of the different parasitic acari, and their practical bearing from a clinical point of view. With regard to mange in the horse, they would realise the fact that all the parasites were microscopic, and could not be found without magnification, and inasmuch as "no parasite no mange" was an appropriate axiom, the parasite should, if possible, be demonstrated to make a reliable diagnosis. This demonstration was not always an easy matter, especially with the sarcoptic variety. It was important to bear in mind that most probably parasitic acari do not multiply except on the host. Apart from the host, too, neither mature parasites, embryos, nor ova long retained their vitality. While, however,

[1] Address delivered before the Midland Counties Veterinary Medical Association, May 11th, 1900.

these facts tell us plainly enough what we must have learnt by common observation, that in the spread of mange the great danger is the horse affected with mange, they admit of the possibility of the disease being communicated by such media as rugs, harness, grooming tools, &c. &c. He was disposed to think that improved hygienic conditions had effected a material diminution in the number of horses affected, but he had ample evidence to prove that mange was not uncommon. The clinical features of sarcoptic, psoroptic, and symbiotic mange were then dealt with, the Professor remarking that he thought that the symbiotic form was not infrequently overlooked. The symbiotes were frequently associated with pruritus of the lower parts of the legs and "grease," and he had known of cases in which the irritation and consequent discharge had developed into quittor, and others in which it had most probably provided conditions favouring the development of the organisms which give rise to "canker" of the foot.

He recognised one gentleman in the room whom he knew had directed special attention to the search for these acari in the lower parts of the legs of horses, and he looked forward with pleasure to hearing his remarks on the point.

The treatment of equine mange due to any variety of acarus was troublesome, especially the sarcoptic, which, if far advanced, sometimes resisted all our efforts. Thoroughness of the application of our remedies, with a consideration for the mature and immature parasites and ova, was of the utmost importance. As to the most effectual parasiticide, he had not met with any improvement on that which had been relied on for the cure of acariasis of man and the lower animals from time immemorial,—he referred to sulphur. He thought the admixture of an alkali such as washing soda advantageous, also that washing the skin with an alkaline solution some hours before the application of the sulphur dressing materially assisted the parasiticidal action.

Reference was made to the statements of some foreign writers as to an alleged product of the acari named *acarine*, said to induce great depression and loss of flesh. Without any actual demonstration of this product, he had often thought that the loss of flesh and debility often observable in bad cases of mange were greater than could be accounted for by the unrest and injury to the skin due to the irritation of the organs of the acarus. At any rate a liberal and highly nutritious diet should be included in the treatment.

Professor Penberthy then referred to mange as affecting cattle, drawing special attention to the fact that these animals were liable to attacks of parasites of the three families before named. In some important textbooks, British and foreign, the existence of the sarcoptic form is denied or placed under doubt. That this disease exists in Great Britain somewhat extensively there could be no doubt. Probably the first definite record of sarcoptic mange of the ox in Great Britain appeared in the current issue of the quarterly journal, from the pen of Dr. Thackery, but its existence had been known to the speaker for years. His experience gave him the impression that it was not uncommon amongst show animals of a particular breed, and he had ample evidence of its introduction into fresh situations by animals purchased at shows. He regretted the absence of a previous president of the Association, in conjunction with whom the speaker had investigated an outbreak introduced by a show animal, and which proved

fatal to a considerable number,—he thought thirteen young cattle. This disease appeared not to affect adult animals so seriously. It, however, called for a most careful inspection of all cattle before admission to show-yards. He knew of a herd of very high repute in which between two and three years ago sarcoptic mange had caused very great loss, it being impossible to sell to advantage, or to gain entrance to show-yards where entrance was preceded by veterinary inspection. He thought the reported case referred to accentuated the necessity for exclusion of animals yielding any grounds for suspicion, for he had met with an almost identical case to that reported in which the disease was traceable to an animal purchased at the Birmingham Show. It was an abominable disease to get into a herd under ordinary circumstances, as it was most troublesome to get rid of, and he knew of no more facile means of distributing the parasites than those which obtained in a show-yard.

The speaker then referred at some length to acariasis of the sheep, which were said to be attacked by the sarcoptes, dermatodectes, and symbiotes. If the sarcoptic variety existed amongst the sheep of Great Britain it certainly had not been generally recognised. The dermatodectic variety, the "scab," scheduled as a contagious disease by the Legislature, was of overwhelming importance. At the present moment this affection was receiving much attention, as it caused serious inconvenience and considerable loss to flockmasters, and many means were adopted for its cure and prevention. To the veterinary surgeon its diagnosis was of much moment. It had been suggested that the central authority should take the matter in hand and enforce a universal system of dipping every sheep in the country, and thus attempt to eradicate the troublesome disease.

The speaker thought that there could be little doubt that dipping, if properly carried out, would prove an effectual means, but inasmuch as sheep-scab was not universally distributed, and indeed in some large districts entirely unknown, he thought that the compulsory dipping of every sheep in the country twice a year was uncalled for, and would prove an expensive process. Local authorities had at their disposal ample powers for dealing with the matter, and the measures adopted by certain County Councils, such as those of Shropshire and Pembrokeshire, appeared to be most effectual in rendering the areas controlled free. The means adopted were described at some length, and after reference to the effect of the symbiotic variety, which he had met with in association with thickening and ulceration of the skin of the legs and side of the chest, the speaker brought his remarks to a close.

VETERINARY EXPERIENCES IN THE HEBRIDES.

BY PETER MOIR, ESQ., M.R.C.V.S., EDINBURGH.

THE following is the Report made by the Author at the request of the Secretary for Scotland and the Members of the Congested Districts Board on the condition of cattle, sheep, and horses in the crofter districts in the Hebrides :—

STORNOWAY (LANDWARD PARISH).

May 14th.—On this date the Committee Meeting arranged that the villages and farms around Stornoway should be the first to be visited, and

this section occupied my time for the remainder of the week. Many of the crofter cattle and sheep of Laxdale, Tong, Melbost, Bayble, Coulregrein, Sandwick, Back, and Gress were inspected, and I regret to report that I found them to be in a deplorable state through want of food and verminous infestation of their skins. The cattle, which mainly consist of cows, were starved, stunted creatures, with milk-giving powers almost suspended, the atrophy of the mammæ and teats being most marked. The sheep were in appearance generally unhealthy and very poor. Several scabbed sheep came under my notice, and at all the townlands the presence of scab was reported. In regard to their water supply it was good and abundant. At Melbost, however, the supply is situated on the edge of a ditch full of stagnant water, and lies at the base of a hill cultivated and highly manured. Organic impurities dangerous to health must be present, and it is nothing short of marvellous to learn that some hundreds of human beings share this water with the horses and cattle of the townland and still enjoy good health.

May 17th I devoted to inspection of the cow-byres in Stornoway and its vicinity, the former along with Superintendent Smith, the latter accompanied by Mr. M'Leod, sanitary inspector. The dairy farms of the Manor, Goathill, Melbost, Holm, and Stoneyfield were visited, and I am enabled to report that at all those farms the amount of cubic space, ventilation, drainage, and sunlight were all that could be desired. The cows from which the Stornoway milk supply is derived are of a superior stamp, in excellent condition, and appear to be in good health.

May 18th.—On that date, accompanied by Councillor Æneas Mackenzie, I visited the Eye Peninsula, and also lectured at Bayble. Mr. Mackenzie presided over a small but intelligent audience. The Rev. George M'Leod, Garrabost, and other speakers agreed that starvation among the stock was very great, and entirely caused by overstocking the common grazing and lack of arable land.

May 19th.—I visited Gress Farm, occupied by Mr. Peter Liddle, whose cattle and sheep are in good order. He accompanied me to Back, where a lecture had been announced. For want of an audience there was no meeting.

Parish of Barvas.

May 21st.—Lectured at the Barvas Schoolhouse to a large meeting, numbering about 30. In this parish I found a slight improvement in the appearance of the stock, but more disease among cattle was reported than in those of Stornoway, and the scab disease in sheep is there very common. The cattle disease I attribute to the custom that obtains among the crofters along that sea border of feeding their animals too plentifully on seaweed; the symptoms as detailed to me being those of acute inflammation of stomach and bowels. The old and disused practice of "bleeding" is largely carried out in this part of the island, and for all forms of disease is in high favour.

May 22d—Cross-Ness.—At this place Mr. Helm, of Galson, occupied the chair at the meeting, there being a fair attendance, including Dr. Ross, of Borve. This gentleman most kindly repeated my lecture in Gaelic for the benefit of those who only knew that language. At Galson, the extensive farm of Mr. Helm, I saw many fine sheep, among them being no "scab," his dipping arrangements for the prevention and cure of that

disease being perfect. I also tested the cows, three in number (whose milk is used for home consumption), for tuberculosis, and found them to be free from that disease.

May 23d.—Lectured at Shadder, where Dr. Ross presided and again interpreted. A fair attendance, including Mr. Helm, of Galson, was present. Dr. Ross most kindly exhibited some animal parasites under the microscope. I learned here that the sheep on the island of Rona are badly affected with scab. These sheep should not be permitted to land on the Lewis (if there is any truth in the report) without careful examination in Rona before embarkation and also at the place of disembarkation. Harm has already been done by the Rona sheep in the Ness district through scab conveyed by them.

May 24th.—Shawbost meeting was poorly attended. Mr. Peter Sinclair, Dalbeg, supplied much useful information regarding the diseases of stock in this district, including those on his own farm. A considerable amount of cattle disease of an inflammatory nature was reported to prevail, the natural result following their unrestrained consumption of seaweed, which in certain conditions may develop noxious or poisonous properties.

Uig Parish.

May 25th—Carloway.—The meeting was fairly attended, and I found the cattle, sheep, and horses of a better stamp and in superior condition to those hitherto seen.

May 28th—Breasclete.—I lectured here to the crofters of that townland and also of Callanish. The meeting was well attended, and there seemed to be a general amount of prosperity among the crofters. One owned to possessing about 100 sheep on a croft of two acres, rental 25s.

May 29th.—Ferried to the island of Bernera, and was received there by Mr. M'Donald, merchant and farmer. I saw several cattle here in fair condition, but lousy. Scabbed sheep also exist, but none came under my notice, as all the Bernera sheep had been removed to their summer grazings. The stock generally is in much need of medical treatment.

May 30th.—From Garrynahine Inn drove to Linshader Farm. I found a well-fed, healthy stock of sheep here. There is abundance of good grazing, but marshy in many parts. Liver-rot disease is therefore somewhat common.

May 31st.—Valtos, by ferry-boat from Callanish. The lecture was fairly well attended, and presided over by Mr. Macrae of Timsgarry. The pasture here is the best, excepting Bernera, I have seen so far, and the cattle and sheep accordingly in better condition. Diseases not so common.

1st June.—Returned to Stornoway, and while passing through the Loch Ganvick and Achmore districts observed a vast improvement in the appearance of the sheep there; the reason being very obvious, viz., the excellence of the pasture, resulting from the land having at one time been cultivated and afterwards allowed to go down to grass. It was indeed an oasis in the desert.

Lochs Parish.

4th June—Leurbost.—I was introduced to this district by Councillor M'Lean, and the lecture was fairly well attended. The Reverends Mr. M'Dougall and Mr. Macallum, Keose, were present, the former giving assistance by interpreting knotty points into Gaelic, and the latter by making

a few remarks as to the expediency of having the pamphlets on Animal Diseases lately issued by the Congested Districts Board translated into the Gaelic language. I saw some cows here in very fair condition; sheep, as everywhere, being on the moors.

5th June—Cromore.—I reached this place by ferry-boat, accompanied by the Reverend Mr. M'Dougall, whose help in piloting me through this part of the Lewis was of very great service and most kindly given. No audience came forward.

6th June—Graver.—I was amply compensated for the toil undergone in walking and for the most part climbing over a trackless and mountainous moor for many miles from Cromore, the meeting here being a great success; auditors were numerous and appreciative. Stock in fair order and healthy.

8th June.—Balallan was reached *via* Garryvad and Keose. Another tiresome and uninteresting tramp was again necessary, with ferry to Keose, thence to Balallan, to enable me to deliver my final lecture in the Lews at Balallan. I received there the support of the Reverend Mr. M'Kay and the Reverend Mr. Macallum, the latter gentleman occupying the chair. This was a good meeting composed of about a dozen crofters, who required no interpretation of my words, as was the case at Graver and other places, and I take this opportunity of reporting that from Mr. Ross, the Reverends Mr. M'Dougall and Mr. Macallum, Messrs. M'Donald, Bernera, M'Crae, Timsgarry, and others, I have received much valuable assistance by their interpretation into the mother tongue of my audiences the subject-matter of my lectures, viz., the diseases that occasionally appeared among their sheep and cattle. To these gentlemen my warmest thanks are due.

Thus far I have submitted a diary in brief of the work that has been carried out by me since the 14th of May to the present date, and it now remains to report more specially with regard to the stock of the crofters in this island. That the conditions of life here during the spring months bear very hardly on the lower animals was a fact very forcibly presented to me when I arrived in the middle of May. Starvation (with its concomitant of vermin) was the condition everywhere of crofter stock. On the roads and common grazings emaciated and hidebound cattle only were to be seen moving listlessly about, likewise diminutive sheep shrunken from sheer starvation, their wool peeling off in patches from that cause, or from the presence of the scab parasites on their skin, and all grazing where grass was barely visible. In the country carts also were to be seen, thin starved-like ponies, and altogether an object lesson was presented to me of a state of matters unparalleled in my experience, and such as I did not believe could possibly exist in the British Isles. Inquiry elicited the information that these animals were in the same impoverished condition every spring, it being worse than usual this year by reason of the prolonged cold and wet weather. Now this annual recurrence of a starvation and hunger period among the lower animals would seem to call for steps calculated to avert a calamity of so serious a nature. There is this to be said, that the crofters themselves present a striking contrast in appearance to that shown by their animals. Their familiarity with the latter seems to have bred indifference to it, and there are many of them who make little or no effort at this time to provide their stock with that amount of food that is necessary merely to maintain them in health. It may be there are some crofters who are unable to do so through want of means, but I did

not fail to remind my audiences that that plea would be of no avail in a Court of Law were the Society for the Prevention of Cruelty to Animals to institute prosecutions for starvation, which under similar circumstances on the mainland were of no infrequent occurrence.

The several causes that contribute to the existence of so sad a state of matters are so well known that a statement of them is almost unnecessary. My own observation and the unvarying testimony and opinions of the leading agriculturists enable me to state that the overstocking of the common grazings and the lack of arable land on which to grow turnips and a sufficiency of cereal crops to tide the stock over the winter and spring are undoubtedly the main factors that operate so disastrously on the crofter's stock.

During the summer months this same stock is removed to the moors, and being afforded there a large area of pasture, indifferent though it may be, rapidly recruits and thrives, a condition, alas, that disappears when the winter privations on the townlands are again encountered.

On a soil such as that of the island of Lewis, barren, granitic, or boggy peat moss, incapable of yielding grasses of good nutritive qualities, the number of crofter cattle and sheep is largely in excess of the number their winter grazings can carry and at the same time provide the amount of food supply adequate to their wants.

These evils are, moreover, intensified by the division and subdivision of crofts of dimensions in arable land varying from one to three acres only. Each party (squatter as he or she is designated) who shares in this cutting-up process of this morsel of land (and extraordinary to relate, there are frequently several), adds his quota of cattle and sheep to those already held by the crofter on that proportion of common grazing that he is entitled to possess, with results that are dire in the extreme to the poor helpless animals. In short, the economic conditions of crofter life are the root causes of the periodical starvation of the lower animals in the Lewis.

As to the remedies, very little consideration is required to arrive at the conclusion that for the existing disproportionate amount of stock more land where cultivable is required on which to sow turnips and oats for their winter supply of provender. During my tour I saw many acres of land in the neighbourhood of townlands divested of its peaty covering, dormant, and unremunerative to the proprietors, which could be utilised for this purpose. The crofters of Arnol in the Barvas district have reclaimed several acres of such land, and with great success. That they have done so without permission is true, but time and again I have been assured by crofters of other townlands, that were permission granted to them by the "estate," they would devote the labour and time necessary to make this land (useless at present) productive for the wants of their sheep and cattle. In this way, and under the control of the several ground officers, I believe that a vast amount of good could be effected. The animals would benefit, and the crofters also, by a rotation of crops on their land not hitherto possible. Roots (as turnips, mangels, or sugar beets), indispensable on the mainland, are at present unknown among the crofters of the Lewis in their system of cultivation.

The alternative remedy presented to us is the restriction of cattle and sheep to a number commensurate with the amount of food supply available for them. That the late Crofter Commission recognised the necessity of this step is apparent from the fact that instructions were issued to crofters

regulating the numbers according to the amount of rent paid. A rent of £1 allowed a cow, a stirk, and eight sheep to be kept. The observance of this rule, if it ever existed, has completely fallen through; in some districts these numbers are exceeded three times over, an increase largely contributed to by the squatter element.

Disease, other than that above indicated, I found the island to be remarkably free from. The anæmic condition of the cattle renders them less liable to certain diseases frequently met with on the mainland. Cases of milk fever or other parturient complications, mammitis, &c., in point of fact any of those forms of disease to which cattle in good condition are subject, are here by all accounts said to be very rare. That the information is correct is I think extremely probable. Anthrax is unknown. A few cases of brief illness and death were reported on a farm about three years ago, but the fatalities were traced to the cattle grazing where sheep had been recently dipped.

I regret that the time at my disposal did not permit of a more extensive application of the tuberculin test among milk cows. The few I did test were free from tuberculosis, but that slight experiment affords no criterion as to its existence or otherwise. Annually a good many milk cows are imported from the mainland, where tuberculosis is rampant, and it is difficult to believe that the disease has not extended to some degree among those of the Lewis. The local medical statistics prove that phthisis is on the increase among the human population, but this may possibly arise by human infection, through more frequent personal communication with the mainland by the natives than was the case in times past.

The occasional effects of the seaweed dietary I have above referred to. I consider, however, there is but a remote likelihood of crofters on the sea coast relinquishing a custom that has been established from time immemorial. The advice and opinions tendered by me regarding the practice did not seem to meet with a favourable appreciation.

I conclude my remarks regarding the crofter cattle by reporting that in every part of the island I found their skins to be more or less infested with lice. The crofters gratefully accepted my advice and prescriptions for medicinal agents to destroy these animal parasites, which remedies they professed great anxiety to be in possession of, as they were completely ignorant how to destroy them. I believe that some improvement will result.

The horses of the island are small, rarely over 14 hands in height, and are not numerous. They are very healthy and hardy, although they have to share in the vicissitudes of the annual period of famine.

With reference to the sheep and their diseases, I desire to point out that the following remarks apply only to the sheep owned by crofters, as those on the large sheep farms, although affected occasionally by those diseases peculiar to the species—viz., braxy, sturdy, liver-rot and louping ill—are most carefully tended and treated with the view of keeping them free from scab, and present a pleasing appearance of cleanliness and good health. This state of excellence, however, is not arrived at and maintained without constant trouble and annoyance to the farmers from the invasions into their pasture by the crofter sheep when they are in the townlands during winter and spring. Fences are broken down, and the good sheep, the sole source of support of the farmer, are exposed to all the risks of disease by contact.

I regret to report, on the other hand, that this highly contagious disease

termed scab is (in some districts more than in others) prevalent among crofters' sheep, the ravages of the causal parasite being aggravated by their poor condition and by bad management. Their owners are cognisant of its contagious nature, and make occasional and ineffectual attempts to cure the scabbed sheep, by smearing with tar and oil, or butter. Yet from the middle of May they are turned out on the fenceless moors, scabbed and clean together, until they are driven back to their respective townlands about the end of September. I am not in a position to quote the number of sheep, but on the lowest estimate there cannot be fewer than several thousands—among them many clean it is to be hoped—that are thus subjected to the infection by a living contagium, than which in the kingdom of the animal parasites none is more prolific and tenacious.

Another remarkable factor in the extension of scab is the presence of vagrant, ownerless, scabbed sheep on the moors, and when I add that dense ignorance prevails among the crofters as to the cause of the disease (one idea being that it arises from tups supplied by the Board being too soft, another that the blood of the sheep is diseased, &c.), it will be obvious that Lewis is in a very backward state indeed.

I would therefore submit for the consideration of your Lordship and the Board that remedies for what may be fitly termed an appalling state of matters generally in connection with the lower animals in the Island of Lewis, are urgently called for.

With reference to the sheep scab I would respectfully draw your attention to the fact that the Diseases of Animals Act, 1896, by prohibiting the importation of foreign animals except for slaughter, has given us security against the introduction to the disease from abroad, while in our own country a centre of infection—the Lewis—is in existence, that, uncontrolled as at present, is capable of doing incalculable harm, more particularly among the sheep of the north of Scotland. From the ports in Stornoway in Lewis, and Tarbert in Harris, a few thousands of sheep are exported annually to the Inverness and Dingwall markets, and among them there is a proportion (small though it may be) of crofter sheep.

Under these circumstances I strongly recommend that the Sheep Scab Order of the Board of Agriculture, 1898, be put into force, and that without delay. To expedite the eradication of the scourge it will be necessary that small owners are afforded facilities for dipping their sheep by the erection of tanks and dippers at selected centres. The expense can be recouped by a small charge, and I found a consensus of opinion that this measure was not only necessary, but would be most popular.

Having regard to the movements of the sheep, fixed dipping seasons would be necessary, viz., before they are driven to the moors, and when they return, the months of May and October; effective dip material, similar to the dips which effected the extirpation of scab in the Australian Colonies, only to be used. Finally, that the dipping in accordance with the Scab Act, 1898, be compulsory and under supervision.

I have furthermore the honour to report that should my suggestions be entertained and carried out, no difficulty will be experienced in securing the safety of the tanks and the supervision of the dipping by trustworthy and intelligent men who have volunteered to underake the duties without fee or favour.

HARRIS.

I have the honour to report that on the conclusion of my duties in

Lewis I proceeded to Tarbert, Harris, in prosecution of my inspection and inquiries with reference to the condition of the farm and crofter stock of that part of the island. I received here much valuable assistance and information from Mr. Sinclair, factor to Sir Samuel Scott, Baronet, M.P., also from the Rev. Donald M'Lean, Scarista, Chairman of the Harris Districts Committee. A visit to the interesting but greatly congested Island of Scalpay formed a day's work, which was pleasantly spent in the company of the local magnate, Mr. Kenneth Campbell, fishcurer and general merchant. He is also said to be the virtual owner of all the sheep on the island, acquired by way of barter, greatly to their advantage, as he can afford to feed them when food is required. All the crofters have byres separate from their cottages. The milk cows that came under my notice are much superior to those in Lewis, and the sheep are reported to be free from disease. A dipping tank would be much appreciated, as there are no dipping facilities.

An earnest appeal was made for the grant of a Highland bull and two or three tups from the Board, which would receive every care and attention from Mr. Campbell.

While on this subject I have to report that all over the Lewis many grateful references were made by crofters regarding the kindness of the Board in supplying bulls, stallions, and tups to improve the quality of their animals.

I also visited the townlands in the vicinity of Tarbert, and with satisfactory results. The domestic arrangements of the crofters in Harris are a vast improvement on those of the Lewis crofters. The energy of the Harris Districts Committee has overcome the rooted dislike in the crofter mind to any change in their habits by compelling segregation of their animals from under their own roof-trees. In Harris the separate habitations are the rule, in Lewis the exception—a step in advance and pleasing to witness.

Contrary to report, I found the crofter stock to be free from disease at present, although scab is sometimes seen among them, also lice in cattle when in poor condition. The practice of smearing sheep with tar, &c. is invariable on the approach of winter. It is found that the sheep thrive in the very wet and cold weather of Harris, a blanket impermeable to moisture being formed by this application which keeps the body warm.

I extended my tour to South Harris, 16 miles distant, and visited the Glebe Farm of the Rev. Mr. M'Lean, the leading agricultural authority in these parts, at Scarista. I gleaned from that gentleman the information that although there was comparative freedom from animal diseases at this date, there had been a serious amount among the stock of the tacksmen who occupy seven or eight large farms, the bulk of the land of South Harris. He also considered that the stock of the small owners received more attention than those of the tacksmen, and were therefore more healthy, and was of opinion the great desideratum in the Hebrides was veterinary skill and advice, with which opinion I most heartily agree.

In conclusion and by way of summary, I would record that my experience during the past four weeks of travel and observation in Lewis, and one week in Harris, with the view of the promotion of the well-being of the lower animals, in regard to their health, general treatment, and surroundings, has firmly convinced me of the urgent necessity that exists for a veterinary surgeon on the island. His assistance would under the present circumstances be indispensable if scab is to be eradicated, and his services

in the direction of inspecting animals slaughtered for food in Stornoway are required.

The causes militating against the well-being of crofter stock are—

The poverty of the soil.
The overstocking.
The apathy of the owners.
The economic conditions of crofter life.

As to how to effect an improvement, I have to the best of my ability suggested remedies with that end in view. I am fully aware, however, there are many difficulties, and that the whole question forms a problem most difficult of solution.

PRESIDENTIAL ADDRESS.[1]

BY J. J. BURCHNALL, ESQ., M.R.C.V.S.

As unfortunately I was not at the last meeting when the officers of this Association were appointed, allow me to take this opportunity of thanking you for the honour you have done me in placing me in the position I now occupy as President of this Association. When I think of the able and experienced men who have preceded me, I feel greatly the difficulties of my position, and that I must make a large call upon your kindly help and support during the year that is before us. And I should like to impress on each individual member that upon him, too, rests a share in the making of these meetings profitable and interesting.

During the coming year I would like to see our meetings well attended, and our members increased by the advent of new members. We know that it is sometimes difficult to get away to attend a meeting, especially by a single-handed practitioner, but it is surprising what may be done by making an effort. The benefits derived from attending our meetings are greater, both individually and collectively, than we are apt to think. It is almost impossible to mix with a number of practical men without picking up some useful information that we may apply to our daily work. Personally I have received many a hint that has been most useful to myself and also to my clients. Knowledge is no burden; we have never done learning, and the more we know the more we find there is still to learn.

Then again there are the social advantages to be gained by our coming together on these occasions, and they surely are great: the meeting with old acquaintances, the renewal of old friendships, and the beginning of new ones; the better knowledge of our brother practitioners in the neighbouring counties, and may I say a greater respect for each other and for each other's opinions. That there is a better feeling among veterinary practitioners than existed at a period that most of us can remember is undoubtedly a fact, and I quite think that not a little of it is due to the good effects of our various societies throughout the country.

Then we come to the benefits to the profession at large. A considerable number of the advantages enjoyed by the profession to-day have had their rise at the meetings of the various provincial associations which have

[1] Delivered before the Midland Counties Veterinary Medical Association, May 11th, 1900.

spent their time, and frequently their money, for the furtherance of these objects, and for the advancement of the profession generally. For this reason, if for no other, they deserve the support of every member of it. That the veterinary associations have done much to raise the honour and status of our profession to its present position I think you will agree, and we could wish that the honoured founders of the earlier societies who have passed away could have lived to have seen the result of their labours. We have valuable papers read to us upon various subjects upon which good discussions take place, and by men many of whom, if they did not express their views in the way of discussion, would never reveal the knowledge they have acquired for the benefit of their brother practitioner in any other way, for it is well known that the most practical man is the one who is least likely to commit his knowledge to paper, and it is only in discussions that the value of his experience can be obtained. I have frequently thought that if the worthy editor of *The Veterinary Record* would index the subject of the papers for discussion in his report of the meetings of the various veterinary societies, he would render his journal a more valuable paper for reference.

The defence of members of the veterinary profession in cases of unjust prosecution is not sufficiently provided for, nor does it receive that amount of consideration that its importance demands. That it is of growing importance, a study of our various periodicals from month to month is a proof, and it is of necessity that some more prompt and wider-reaching means of help should be afforded to those members who are threatened with legal proceedings, who, if their case is a suitable one, should be able to rely upon the support of the Association in the first instance, and before they have probably suffered a reverse, and the case has been rendered more complicated and expensive. That the present defence society is doing a good work there is no doubt, and it deserves our thanks. But at the same time it must be looked upon as almost a local society. One can well understand a man living in the south of England, say Devon or Cornwall for instance, not having much feeling of security in a society that has its home in Manchester, where its meetings are held and where the majority of its officers reside, and with whom he is never in touch, and of whom he seldom hears. And it readily occurs to one that a defence society worked from various branches, situated in some of our larger towns, say London, Birmingham, Manchester, and Edinburgh, having one common head, would be in a much better position to render help to its various districts, and help that would be infinitely more valuable because it would be more prompt than under the present system. I fully believe that a defence society carried out on some such plan as this would receive the support of almost every member of the profession and supply a long-felt want, as well as induce a stronger feeling of unity amongst us.

A word in passing anent the R.S.P.C.A. This society has not always treated the veterinary profession with the consideration that it might have done. They have been inclined to make use of us for their own ends, and have resented any opposition to their dictum on the part of the veterinary practitioner. I am inclined to think that one great cause of offence has been the objections of veterinary surgeons to support their charges when they may not have agreed with them, or the defendant may have been a client. I believe that no more humane body of men exists than the present day veterinary surgeons, and it is a great pity, and the fault generally I am

sure of the officers of the R.S.P.C.A., that a better feeling does not exist between them. The R.S.P.C.A. is a noble institution, and when one compares our own country with the inhuman manner dumb animals are treated in some of the continental countries, one cannot but be thankful that such a society exists. At the same time one would like to see it conducted in a more tolerant manner. This is a matter to which a well organised defence society might apply itself with advantage.

With regard to the Benevolent Associations, too much cannot be said for an object so worthy, and one cannot help wishing that the two societies could see their way to join hands in their good work, and whether or not they should be run in connection with a defence society; the formation of local branches in their case also would seem to promise greater facilties in their management, and add to their usefulness.

One of the approaching important questions affecting the veterinary profession is its financial position. It is a question that is likely to engage the serious consideration of our Council in the near future. That something must be done to augment our funds has, I think, become patent to most of us, and the probability is that that help will have to come from within. We are not generally rich men and are not likely to make fortunes by our work. Our incomes cannot become large, our fees being limited by the value of our patients, the lives of which, as a rule, are not of a sentimental value, and our charges must not exceed a reasonable proportion of that value. So that the chances are very remote that the profession will ever receive any great windfalls in the way of legacies from its own members. Whatever course should be decided upon to overcome the growing deficiency, whether by an annual subscription or otherwise, it will I am sure be met in a cheerful manner by our members generally. And we may confidently leave it in the hands of our Council to bring the matter to a successful issue.

Foot-and-mouth disease has again made its appearance amongst us, and in a somewhat mysterious manner, breaking out in the county of Norfolk and extending to the counties of Suffolk and Bedford. Prompt measures for its arrest have been adopted, and after a second outbreak it is hoped that it may have been suppressed, but a somewhat grave state of things exists. Several cargoes of cattle and sheep have also arrived in the Thames from the Argentine Republic affected with the disease, and the importation of live cattle from the South American ports has been stopped, that country being reported to be in a badly affected condition. Foot-and-mouth disease has probably caused greater loss to the agriculturists of this country than any other of the contagious diseases, and should it happen to spread throughout England at the present time, when the farming interests are in a most unsatisfactory and depressed condition, the consequences would be serious indeed. It behoves the Board of Agriculture to be on the alert, and to keep in close touch with the veterinary profession instead of trying to do without it, as we have lately heard of them doing in several cases of reported swine fever outbreaks.

In conclusion, gentlemen, allow me to thank you for a patient hearing, and to again request your kind co-operation in carrying on the work of the Association throughout the coming year, so that at the end of that time we may feel that we have made some little advance.

Notes.

INSTITUTE OF PUBLIC HEALTH—THE ABERDEEN CONGRESS.

The official programme of the Congress of the Royal Institute of Public Health, which is to be held in Aberdeen from 2d to 7th August, has now been issued. A summary of the programme, including the names of the principal lecturers, has already been given in the *Journal*, and, as already stated, the Congress will be opened by the President, the Earl of Aberdeen, in the Mitchell Hall, at 11·30 on Thursday, 2d August. On the following morning, at ten o'clock, in Marischal College, Professor A. Sheridan Delepine, Owens College, Manchester, will deliver his lecture on "Disinfection." On Monday, at the same hour and the same place, Professor Percy F. Frankland, D.Sc., F.R.S., University of Birmingham, will give his lecture on the recent developments in the Purification of Sewage; and on the following day Dr. Patrick Manson, LL.D., Medical Adviser to the Colonial Office, will also deliver his lecture at Marischal College at ten o'clock on "Malaria." The various sections are to meet in Marischal College on the opening day at two o'clock. In Section A, Dr. W. J. Simpson, Professor of Hygiene, King's College, London, will preside, the subjects under discussion in this section being "Preventive Medicine" and "Vital Statistics." Section B—Bacteriology and Comparative Pathology—will be presided over by Dr. D. J. Hamilton, M.B., F.R.C.S.E., Professor of Pathology, University of Aberdeen. In Section C the subjects to be discussed will be Chemistry and Meteorology, and the President of the section will be Dr. C. Hunter Stewart, M.B., D.Sc., Professor of Public Health, University of Edinburgh. Section D, in which Mr. John Honeyman, R.S.A., F.R.I.B.A., architect, Glasgow, will occupy the chair, several interesting papers relating to Architecture and Engineering will be submitted, including one on "An Ideal Workman's Cottage" by Councillor Cooper, Aberdeen. Dr. Farquharson, M.P. for West Aberdeenshire, will be President in E Section, which is to deal with Municipal and Parliamentary Hygiene. Among the papers to be submitted will be one by the Countess of Aberdeen, President of the Women's Local Government Society, on "Women as Members of Sanitary Authorities," and another on "Sanitation and Economics," by Dr. Beveridge. The various conferences in connection with the Congress will also take place in Marischal College, and will commence their proceedings on Monday at eleven o'clock forenoon. The conference for Medical Officers of Health will be presided over by Dr. John C. M'Vail, M.D., Medical Officer of the counties of Stirling and Dumbarton; at the Sanitary Inspectors' conferences the President will be Mr. Peter Fyfe, F.R.S.E., Chief Sanitary Inspector of Glasgow; while in that for Veterinary Surgeons Professor Williams, F.R.C.V.S., Principal of the New Veterinary College, Edinburgh, will occupy the chair.

CHURCH SANITARY ASSOCIATION.

The eighth annual meeting of this Association was held last week at the Church House, Westminster. Dr. W. Collingridge, Sanitary Officer for the Port of London, who presided, emphasised the need of the Society's existence. A question which urgently demanded attention was the vital necessity for cleanliness in the preparation, storage, and use of food. Animals should be examined before slaughter by a competent authority.

Municipal slaughter-houses would do much to prevent cruelty, and undoubtedly much to prevent unfit food from being consumed. The Rev. F. Lawrence, Hon. Secretary, reported that sermons had been preached during the year at home and abroad, and efforts made to induce legislation respecting slaughter-houses, overcrowding, and the like. He appealed for additional funds. The report was adopted on the motion of Dr. Christopher Childs, seconded by General Lowry. Canon Rawnsley moved that it was desirable preachers and all persons of influence should aid in preventing disease and fostering the health of the people. Mr. Hugh Munby seconded, and the Rev. A. M. Mitchell supported the motion, which was carried. On the motion of Surgeon-Major Poole it was agreed that "this meeting is of opinion that hygiene should be taught in elementary schools." Miss Ethel Springett read an interesting paper on the subject of Consumption. Resolutions of thanks to the Chairman and Secretary concluded the proceedings.

HOW LONG AFTER BURIAL IS INFECTION FROM DISEASED ANIMALS POSSIBLE?

E. Klein injected animals with different pathogenic bacteria, which immediately after death were buried in tin or wooden boxes, or directly in sand or damp earth without any box. The bodies were exhumed after varying lengths of time and other animals injected with preparations made from the diseased parts. In case of the bacillus prodigiosus the results were negative after the animal had been buried six weeks. Staphylococcus produced no effects after being buried two months, the cholera bacillus after twenty-eight days, the typhus bacillus after twenty days, diphtheria after twenty-one days. Tuberculosis was tested only after burial for seven weeks, and produced no effects. Specimens injected with a preparation from an animal that had died of bubonic plague and had been buried twenty-one days were not affected. The results of these experiments give evidence that bacteria do not live long in dead bodies, and that the power of infection is soon lost.—*Journal of Applied Microscopy.*

HORSE SICKNESS MICRO-ORGANISMS.

Dr. G. Carrington Purvis (*Cape of Good Hope Agricultural Journal*) publishes the following note on some micro-organisms found in the blood of horses ill or dead of horse sickness:—

1. A large bacillus, not unlike that of anthrax, which has a tendency to grow into long filaments. I have found this organism in some chronic cases of horse sickness, also in post-mortem blood taken from the blood-vessels of an animal some hours after death. In one case I found the organism in the spleen. It is without doubt the bacillus first discovered by Major Nunn, Army Veterinary Department, some years ago.

2. A small coccus or bacterium, surrounded by a capsule not unlike the pneumococcus of human pneumonia. This organism is occasionally found in preserved blood.

3. Yeast cells or yeast-like cells which appear to be of two kinds—(*a*) a somewhat large round (or slightly oval) form, and (*b*) a small ovoid form with one end or pole narrower—*i.e.*, more acute than the other.

4. Small round or ovoid bodies, one or two in number, inside some of the ***white*** blood corpuscles. They are not stained by eosin nor by ordinary

1 per cent. solution of methylene blue. They are easily stained by ¼ to ½ per cent. watery solution of magenta. These bodies are not found in every case of horse sickness.

5. A small spherical body (like a coccus) inside some of the *red* blood corpuscles. This coccus-like organism is somewhat difficult to find, and this for two reasons—first, it occurs sparingly in the blood, and second, it is somewhat difficult to stain. I have, however, found it in every case of horse sickness (some three or four cases) I have examined. In one specimen I found a *ring-like* form, not unlike the form figured in articles dealing with human malignant malaria, and in another specimen I occasionally found *two* cocci-like bodies inside a single red corpuscle, but this is rare. Till very recently I thought I was the first to note these spherical forms, but I am informed that one of the two Frenchmen who investigated rinderpest some three years ago in the Transvaal has also found a spherical body inside some of the red corpuscles in horse sickness. I think that these intra-corpuscular parasites have something to do with horse sickness. Their constant presence (so far as I have observed) is, to say the least of it, most remarkable.

6. Lastly, I once cultivated a yellow fungus from the spleen. This fungus yielded up to alcohol a beautful golden yellow pigment not unlike the colour of the pericardial or pleural effusion in a typical case of horse sickness.

WHY "STRIPPINGS" ARE SO RICH IN CREAM.

Speaking of the yield and qualities of milk, Professor Henry Stewart (*American Agriculturist*) makes the following interesting observations regarding the quality of the last drawn milk of cows:—

"Every person who knows anything of milk knows that the last drawn milk of a cow is much richer than the other milk; but the reason for this is not generally known. Indeed, it has been a subject of dispute, and the explanation usually given is quite erroneous. The structure of the cow's udder well studied will explain why the strippings are so rich. Any fact learned is interesting in two ways; first, because it is pleasant for the mere knowledge gained and the relation of it to matters of daily life; and, second, because the knowledge is a guide to the right kind of practice in dairy work. A cow's udder is composed of a solid mass of glandular substance apparently made up of very small nodules or masses, through which a fine membrane passes so as to separate the whole into cells or divisions. The udder is divided into two parts by a membrane from the front to the back, making two separate and distinct halves. These halves are not divided, and yet the front and back part are distinct from each other, each quarter being connected with the teat which belongs to it by the small cells or divisions and small pipes or ducts leading from them to the teat. The upper part of the udder is made up wholly of fat; the lower part has very little fat in it. Consequently with this structure the udder cannot, as many have thought, be a simple reservoir of milk in which the cream can rise to the top as it accumulates in the udder. The udder, in fact, can hold very little milk. In a recent examination of an udder by careful dissection the combined spaces or ducts in it were found to be insufficient to hold half a pint of milk; but the milk was held as by a sponge of close texture all through the glands of the udder, and in the small cells mentioned, which thus kept the milk as if thousands of small

bladders, each holding milk, were gathered into another and much larger bladder, but all the milk found would not measure a pint; and this udder was taken from a cow milking several quarts at a time that was slaughtered twelve hours after having been milked. The milk, therefore, *must be produced in the udder as the milking proceeds*, and the cow may prevent the flow of milk by repressing this action. The giving of milk is clearly a voluntary act of the cow, and as she lets it down the milk flows from these cells into the passage leading to the teats. Necessarily the milk from the upper part of the udder being mostly fat, the milk is made up largely of fat, which is mingled with the serum or milky fluid that escapes from the glands by a change of the substance into milk. Thus the richness of the strippings is accounted for."

TALE OF AN ARMY MULE.

A military correspondent tell us a true story of an army mule which is really not easy to beat, and which occurred in the south of Ireland not more than five years ago. A certain battalion had on its charge three transport horses and four mules, two of which were used to draw the Maxim guns and two to carry ammunition. One of the gun mules had to be cast for sickness or some infirmity. Application was made through "the usual channel" for another to take its place. After a little time the answer was received that no mule was available at the time, but that a small horse which would do what was required would be issued. The horse was issued, arrived, and was duly "taken on charge." When the return of animals on charge was rendered to the Quartermaster-General, addressed as required to the Adjutant-General, at the end of the month, it was returned with a civil request that the return would be amended, as by some error it showed four horses and three mules on charge instead of *vice versa*. To this a courteous reply was sent, pointing out that a horse had been issued in exchange for a mule, and recalling the transaction to memory. Back came a letter, somewhat more peremptory in tone, "through the usual channel," demanding that the return should be at once amended, and stating that no record could be found of the alleged substitution of a horse for a mule. Again the correspondence, now growing in bulk—and postage—went back to its exalted source, with a further explanation of the transaction. Again it was returned, this time with a peremptory request that the return would be amended without further correspondence. Again it travelled back with the reiterated statement that the mule was a horse. Back it came with an order that the animal should be examined and its species determined by competent veterinary authority. Now the Colonel of this battalion was very proud of holding the certificate of the Aldershot Veterinary School; he accordingly certified that he, holding this certificate, had that day examined animal number so-and-so, and that it was a horse and not a mule. Back came the reply that no infantry officer could be regarded as a satisfactory veterinary authority, adding that orders had been sent to the G.O.C. of the district to detail a veterinary officer to render the required certificate. This officer came, at some expense to the public, saw the horse, certified it was a horse, and a great department of State was satisfied, and an interesting and instructive correspondence was brought to an untimely (?) end. Moral: the War Office cannot be humbugged.—*Westminster Gazette.*

THE DYING CHARGER.

The versatile Canon Rawnsley does not reserve his pen for any one class of subject, but works in many causes. The following, by him, is published by the Church Society for the Promotion of Kindness to Animals; and is a plea for the extension of the benefit of the Geneva Convention to those relieving wounded horses on the battlefield. That such benefits should be extended to these workers we are sure none will deny; and the sooner they receive fitting recognition the better for the war-horse, as well as for all actively employed in military veterinary work.

HERE long unhelped and helpless have I lain,
In agony that quite forbids me swoon;
Thro' the cold night's intolerable pain,
Thro' thirst and torture of the burning noon.

Shot in the spine, I cannot move nor rise,
Dumb, shattered jaws are filled with blood and sand,
And fettered by a girth that none unties,
My poor swoll'n body feels the tightening band.

I have no God to pray to,—He, the man
Who was to me as God, reeled back stone dead,
I fell when charging foremost in the van,
My comrades past me like a whirlwind fled.

At early dawn a cock-crow from afar,
With momentary solace seemed to come;
For I remembered fields unplagued by war—
Those pleasant pastures of my native home.

The cock-crow ceased, but voice to voice replied
(Voices of unimaginable woe),
And here a brother raised his neck and cried,
There pawed the pitiless earth in dying throe;

"I could not die." Ah, friends with tender heart,
Think of the horse, that wounded and in fear,
Lies still undying in his long death smart,
And only asks a ball behind the ear.

Shall not the Christ, Who came with Saviour hands,
To bid the travail of creation cease;
Send forth to fields of war His Red-Cross bands,
And give the dying charger painless peace.

H. D. RAWNSLEY.

MICRO-ORGANISMS IN TUMOURS.

Sjöbring (*Centralbl. f. Bakt.*) gives the result of an investigation on which he has been engaged since his first publication on this subject in 1890. Proceeding from the idea that the hypothetical virus of cancer must be a facultative parasite and capable of growth outside the animal organism, he has devoted his attention to the cultivation of the organism in question. As a medium he employed 8 per cent peptone gelatin, to which was added 1·5 per cent. of a concentrated watery solution of potash soap prepared from human fat, 1 per cent. of cane or grape sugar, and generally 50 per cent. of sterile ascitic fluid, the medium being sterilised. Tubes of this medium were inoculated with pieces of fresh tumours (not ulcerating), removed aseptically, and incubated for a week at 37° C., or at the room

temperature. By this procedure he has succeeded in obtaining organisms from about thirty tumours of various kinds, namely, carcinomata of the skin, mamma, stomach, uterus, ovary, rectum, sarcomata, ovarian cysts, uterine myomata.

The organisms from the different tumours grew with varying rapidity; from some an abundant growth, from others only a scanty growth, was obtained. These organisms, which were to be seen only in fresh preparations of the culture, belong, the author affirms, to the rhizopods. The possibility of the appearances being due to lecithin, myelin, or other non-living organic matter, he refutes by the occurrence of ameboid movement and fission. The appearance of the organisms is very variable, but three varieties may be recognised, namely, ameboid forms, typical rhizopod forms, and involution (or resting) forms. The ameboid forms possess the greatest interest, and are divisible into the following types:—(1) minute delicate vesicles with a thin wall and watery contents; (2) larger, spherical, transparent, or finely granular bodies, with eccentric homogeneous nuclei; (3) similar to (2), but as large as a tumour cell, some enclosing a similar smaller cell in their interior; (4) rounded or sausage-shaped, greenish, shining bodies, with one, two, or more vacuoles, round which the protoplasm is concentrically arranged; (5) plasmodial forms, with pseudopodia and large nuclei; (6) encysted forms. The involution forms are found in cultures in which extraneous bacteria are flourishing. The fully developed rhizopod forms were only occasionally seen, and particularly in dilute media. Three types were encountered. In the same culture the type always remained constant. A series of eight mice were inoculated with such cultures; in four, positive results were obtained. A culture from a mammary carcinoma produced on subcutaneous injection a cylindrical-celled cancer arising from the sweat glands and hair follicles after three months. In the second a less typical result obtained. In the third a culture from an ovarian colloid cystoma produced on intraperitoneal injection a colloid cystoma arising in connection with the epididymis; in the fourth, a well-defined tumour of an adenomatous nature arising from the sweat glands. In all the cases the parasitic forms found in the human tumours were to be seen.

ATMOKOUSIS.

Some years ago Sneguireff of Moscow made observations on the effect of steam as a hæmostatic. Since that time the application of steam to the interior of the uterus has become a recognised procedure in human practice for the treatment of uterine hæmorrhage and the modification of the character of the uterine mucosa. The action claimed for the steam is said to be at once caustic, hæmostatic, anæsthetic, and antiseptic. The apparatus used by Sneguireff consists of a kettle for generating the steam, and a double catheter for conveying the steam into and out of the uterus. The procedure so introduced by Sneguireff has been popularised, so to speak, by Pincus of Danzig, who has applied the name of atmokousis (ἄτμός—steam) to the operation. He states that the method presents a specific against uterine hæmorrhage from whatever cause, and produces good and rapid results in all forms of endometritis, metritis, and subinvolution. Simpson of Edinburgh has tried this novel therapeutic measure, and, in the main, speaks well of it. Any one interested in the matter should read his

paper published in the June number of the *Scottish Medical and Surgical Journal*. The question which naturally suggests itself to us is, whether this form of treatment can be employed in veterinary practice. There seems no reason to assume that it cannot; and, therefore, it only remains for the more daring and ingenious among us to give it a trial.

KREOCHYLE.

Under the name of Kreochyle Messrs. Barff and Wire have prepared a form of liquid meat for veterinary purposes. They claim that this preparation contains the whole of the soluble albumen of meat in an uncoagulated condition, and that it is prepared from the best beef. It is highly spoken of by many veterinary surgeons, and has been used for many years by the medical profession for children, invalids, &c. Medical periodicals, such as the *Lancet*, *British Medical Journal*, &c., have evinced great satisfaction with its beneficial properties. The Kreochyle Company, Viaduct House, Farringdon Street, E.C., will be very pleased to send samples free to any veterinary surgeon who may like to try this new form of food for cats and dogs.

Extracts.

BENJAMIN JESTY: A PRE-JENNERIAN VACCINATOR.

NOT many of our readers, we venture to imagine, will be acquainted with the historic fact that vaccination was performed in 1774, or twenty-two years before the date of Jenner's first vaccination. And yet such appears to be undoubtedly the case. The person who was really the first vaccinator was a Dorsetshire farmer named Benjamin Jesty, an account of whose experiments is given in the *Johns Hopkins Hospital Bulletin* for February, and from which, on account of its extreme interest, we take the liberty of quoting the following particulars:—

"Benjamin Jesty was born at Yetminster in Dorset, and was a farmer. Subsequently he moved to the farm of Downshay in the Isle of Purbeck, in Dorset, situated not far from Swanage. Judging from what has come down to us concerning him, he appears to have been an eccentric man, full of quaint ways of action and speech, but with a good share of the power of observation and of sensible reflection over what he had observed. In 1774 small-pox was prevalent in his locality. He was thought to be in no danger of it himself, having had the cow-pox previously by taking it casually from the cows. This was a matter of tradition through the countryside. Some of his family were not so protected, and the fact that two of his maid-servants, who had previously had the disorder from the cows, attended patients suffering from small-pox without infection, seems to have determined Jesty to inoculate the cow-pox into his own family as a preventive of small-pox. The farmer is said to have argued thus:—'For his part he preferred taking infection from an innocuous animal like the cow, subject to so few disorders, to taking it from the human body, liable to so many and such diseases, and that he had experience on his side, as the casual cow-pox was not attended with danger like the variolous infection; and that beside there appeared to him little risk in introducing into the

human constitution matter from the cow, as we already eat the flesh and blood, drink the milk, and cover ourselves with the skin of this innocuous animal.' (Extract from the communication of Rev. Dr. Bell).

"Accordingly, Jesty carried out his ideas and inoculated his wife and two sons, aged two and three years, with the cow-pox. The patients went into the fields, and the virus was taken on the spot from the teats of the cows. A stocking-needle was the instrument used, Mrs. Jesty being inoculated under the elbow, the sons above. The latter had the disorder in a favourable way, but in the course of a week Mrs. Jesty's arm was much inflamed. She had fever, and was so ill that a neighbouring surgeon, Mr. Trowbridge of Cerne, was called. He said 'You have done a bold thing, but I will get you through it if I can.' She soon recovered perfectly. Dr. Bell states that the boldness and novelty of the attempt produced no small alarm in the family and no small sensation in the neighbourhood. Fifteen years later, in 1789, the sons were inoculated for the small-pox by Mr. Trowbridge, along with others who had not had the cow-pox. At this time the inoculation of small-pox was a common procedure. The arms of the Jestys inflamed, but this soon subsided, and no fever or other variolous symptoms were observed. The unprotected individuals went through the usual course of inoculated small-pox. Subsequently Mrs. Jesty and her sons were often exposed to small-pox without taking it, while in 1805 one of the sons was inoculated for small-pox with a negative result.

"It is a wonder, as Dr. Bell notes, that nothing of these cases was known to Jenner, as they would have been valuable evidence in support of his doctrines of the value of vaccination. But when one considers the means of communication of the day, it is easily understood why this experiment of a south of England farmer should have only become known to a very local district. Statements regarding these facts were drawn up in 1803 by Dr. Bell and Mr. Banks, the member for Corfe Castle, which is close by. These came before a committee of the House of Commons and the Jennerian Society. In 1804 the Society endeavoured to get Jesty to come to London in order that they might see him and investigate the matter, but an attack of gout prevented. The following year the secretary of the Society wrote—

'LONDON, *July 25th*, 1805.

'Sir—I am desired to propose to you that, provided you will come to town at your own convenience, but as soon as possible, to stay not longer than five days unless you desire it, for the purpose of taking your portrait as the earliest inoculator for cow-pock, at the expense of the institution, you will receive fifteen guineas for your expenses, and the members of the establishment will be happy to show you any civility during your stay in London, on which account it is hoped you will be put to little or no expense.—I have the honour to remain, Sir, your obedient humble servant. WILL. SANCHO.'

"Mr. Jesty accepted the invitation and journeyed to London, taking one of his sons with him. It is stated that they met with great attention from the members of the Jennerian Society, who were much amused by Jesty's ways. Some idea of his characteristics is given by various incidents reported. His family tried to induce him before coming to dress more fashionably, but he said 'he did not see why he should dress better in London than in the country.' Mr. Colson writes that on his return he

gave a very unfavourable account of the metropolis, but said there was one great comfort there, viz., that he could be shaved every day. While there he was inoculated for the cow-pox, and his son for the small-pox, but neither took effect. This was done by the Society probably for the sake of their investigations. Mr. Jesty was presented with a pair of very handsome gold-mounted lancets, and his portrait was taken by Mr. Sharp; but he proved an impatient sitter, and it is said would only be kept quiet by Mrs. Sharp's playing on the piano for him.

"The members of the Jennerian Society drew up a statement which among other things testified 'that Jesty had given decisive evidence of having vaccinated his wife and two sons in 1774, who were thereby rendered unsusceptible of the small-pox, as appears from their frequent exposure and inoculation. He was led to this from knowing the common opinion regarding the protection of cow-pox against small-pox, and that he himself for the same reason was incapable of taking small-pox and from observation of the same thing in others. He believed that cow-pox was free from danger, and that by it he should avoid various human diseases, such as the evil, madness, lues, and many bad humours as he called them.' The year after his visit to London Jesty seems to have suggested an application for some pecuniary reward, but as the secretary of the Vaccine Institution considered any grant improbable, the matter was dropped."

LAMENESS IN RACEHORSES ARISING FROM AFFECTIONS OF THE BONES.

M. Paul Cagny, speaking before the *Société Centrale* at Refort on 22d February last, discussed this important subject. Racehorses he described as young animals whose period of growth is not yet ended, but during this period they are subjected to excessive exercises for their development, and these frequently result in lamenesses. He distinguished between lamenesses of osseous origin and those arising from visible congenital lesions or defects of conformation of the joints. He left out of sight what might happen to horses whose growth and development are clearly below the average, as also lameness caused by kicks, falls, and so on. He attributed lameness of osseous origin in racehorses to four causes—(*a*) age; (*b*) excess of work; (*c*) hereditary influence; (*d*) more frequently to a combination of two of these causes.

A. Influence of Age and Work.—In the young horse the ossification is not complete, the bones are comparatively soft, and in particular the ossification of the epiphyses is not finished. Mere walking in a meadow is easy enough, but it is quite a different thing when we come to galloping, even on soft ground. Practice shows us that at a particular time all colts at the beginning of their training present varying irregularities of action. In well-bred horses, whether colts or full-grown, walking action is accompanied by a particular cadence,—the regular swaying of the hind-quarters is rendered quite visible by the oscillations of the tail as it strikes the right and left flank alternately. But during the early months of the training of racehorses—that is, when they are eighteen months to two years old—this swaying motion disappears sooner or later, and they all acquire that stiff action which caricaturists like to depict as characteristic of racehorses. The young animal has no longer any suppleness, neck and trunk remain

straight and unbending, the limbs move at a walk as if they were all of one piece, and, the joints being no longer fixed, they are thrown forward in a jerky way, just skimming the ground. M. Cagny considers these to be symptoms of general osseous fatigue, the period of ossification being rendered painful by the fact of excessive work. He does not forget that muscular fatigue has something to do with it, but says if that alone were the cause the irregularity of gait would disappear after a few days of rest, whilst the fact is that it persists for weeks even when the colt is taking only its so-called "constitutionals." Later on, when the young horses have resumed their natural gait and have run their first races—that is, when they are two and a half years old—one notices veritable lamenesses in many of them. The young animal is affected in the shoulders, and his gait is really that of a horse suffering from shoulder lameness. Sometimes, at a still later stage, say 36 to 40 months, we may notice lameness of the hind quarters. M. Cagny draws attention to the fact that these affections coincide very nearly with the period of consolidation of the epiphyses of the upper segments of the fore limbs in the case of the former, and of the hind limbs in the case of the latter. M. Cagny thinks that the only real cure for this is rest and diminished exercise.

B. Hereditary Influence.—A perfectly-shaped racehorse will gallop with ease, but when the rider draws him up he seems to make a slip, although the ground may be quite smooth and regular, and then he is seen to be limping on three legs. He is with difficulty brought back to the stable; when examined, neither heat nor swelling is found in the leg, but a very painful point is found either above or below the pastern joint. The accident does not always present itself under the same conditions; it may occur in the stable when the animal rises too suddenly. Nor has it always the same consequences. Often, if properly treated, and specially if rest is allowed, the lameness disappears and leaves no traces. In other cases a large exostosis is seen to appear at the level of the painful point, and, in the gravest cases, there is fracture with tearing away of the articular ligaments, more frequently above than below the pastern. But the painful point is always to be noticed, and at the same time the signs of intense pain, recalling that which accompanies fractures. M. Cagny uses the words "intense pain" without forgetting that in racehorses pain is always exaggerated. When a veterinary surgeon is once accustomed to these lamenesses, he learns, merely by the manifestation of pain, to distinguish them from those arising from a sprain caused by a false step on irregular ground. In general the painful point is nearly on a level with the upper or lower insertion of one of the lateral ligaments of the pastern joint. Sometimes the lameness is scarcely observable, and no painful point is to be found, but from analogy we conclude that the lesion is the same in nature, though not so serious, or that its position is at the insertion of some other articulation which we cannot get at on account of its situation.

After citing some illustrative cases, M. Cagny goes on to state that fractures caused by muscular efforts are not uncommon in racehorses They are sometimes observed in the lumbar regions in animals cast for the greater operations, and sometimes they are the result of a slip or a jump. He attributes them all to one cause, and argues as follows:—In general these lamenesses occur several times in the same animal and with varying intensity, and when they end by a fracture with complete tearing away of the articular ligaments, the fracture occurs almost at the same time in the

two corresponding articulations; this seems to indicate a peculiar osseous diathesis. In precocious animals like racehorses the bones are denser than in lymphatic horses; even when they are young they have adult bones. The articular ligaments ought to unite in a way imperceptible to the bones; the transition from the cartilaginous state ought to go on gradually in such a way that the cartilage may lose its elasticity progressively. But if the work of ossification goes on too rapidly it is just the same as if it were the work of calcification of the cartilage, and then the welding of the bone and of the cartilage may become brittle. Precocity would thus bring about a too rapid calcification of the ligamentary insertions. This hypothesis would apply to half-bred animals also, and would explain certain lamenesses of growth which have been noticed in them, and in particular lamenesses with painful point in the pastern.

HEREDITY IN DISEASE.

IN the *Veterinary Journal* for May we published a paper bearing the above title, by Professor Hamilton, of Aberdeen. The subject is of so much importance to all who have anything to do with stock that we make no apology for culling copious extracts from a paper by Dr. G. Archdall Reid, which appears in the June number of the *Scottish Medical and Surgical Journal*, and which is, in a way, an answer to Hamilton's paper. Dr. Reid has opinions of his own, and, what is still more to the point, he has courage of his convictions, although those convictions run counter to some of the most cherished modern hypotheses. Concerning the question of the transmissibility of acquired characters he says:—

"A few years ago it was universally believed that acquired characters were transmissible. It was thought that changes in body and mind—caused by exercise, disease, accident, or what-not—affected the germ-cells in such a special manner that the traits the parent acquired tended to reappear as inborn characters in the child. At the present day the majority of those who have given real scientific attention to the question believe the contrary. The problem is of obvious importance to medical men, who, however, as a body have curiously neglected it. Before beginning its discussion it is necessary to define a couple of terms, the loose use of which has resulted in endless confusion.

"An *inborn* character may be defined as one which results in the individual from the constitution of the germ-cell (or pair of germ-cells) whence he sprang. Thus a man's ears, eyes, nose, &c. are inborn characters. They arise because his germ is so constituted that under fit conditions of shelter, nutrition, &c. it tends to proliferate into an organism having those characters. An *acquired* character, on the other hand, is one which results from the action of the environment on the soma—the systemic or body cells as distinguished from the germs. Hence all characters produced in the individual by modes of life, by exercise, disease, or accident, are acquirements. To take an example, suppose the child of a normal man is blind; then the blindness is inborn if due to a defect in the germ whence the child sprang, but acquired if due to disease or accident to his visual structures *after* they have developed from the germ. The error is often made of supposing that all new characters are acquirements. Thus a supernumerary digit on its first appearance in a family is often spoken of

as one. It must, however, be clearly borne in mind that the distinction between the inborn and the acquired is not one between the old and the new; it is wholly one of origin. Inborn characters originate in the germ-cell; acquired characters in its descendants, the somatic cells. As a fact, every character acquired or inborn is new to every individual who has it; thus a man's head is as much a novelty to him as a supernumerary digit. Every child differs somewhat from its parent. When a difference is inborn (*i.e.* when it is due to a germinal peculiarity), it is technically termed a "variation." All acquirements, on the other hand, are termed "modifications." It should be noted that a modification (unlike a variation) does not necessarily imply a difference from the parent; both parent and child may acquire similar modifications. The cause of variation is yet a matter of dispute. Many elaborate theories have been enunciated, which, at the least, afford splendid testimony to the imaginations of their authors. We need not dwell on them; suffice it to say that variations do occur, no matter how produced. Men do differ in inborn characters from their parents.

"The body, as I say, is a cell-community, composed of germs and other cells. Now suppose a man acquires a character; suppose, for instance, he strengthens his arms by exercise, or weakens his legs by laziness, then, if his acquired character is to be transmitted, the change in his arms or legs must so affect his germs, that it will be reproduced (as an inborn character) in the children into which the germs proliferate. This consideration at once reveals the difficulty of all belief in the transmission of acquired characters. How can each one of the million changes which may occur in the arms, legs, and other parts of the body affect the germs (situated it may be far distant) in such a special manner that after fertilisation and long separation from the parent organism the germs will proliferate into beings that have inborn the *particular* character the parent acquired? How, for example, can a modification of the parent's great toe affect his germ differently from a modification in his little finger? What is the machinery by which this magical process is carried out? *A priori*, therefore, the transmission of acquirements seems impossible; or at least so highly improbable that only the clearest evidence should satisfy us. Is such evidence forthcoming? It is a simple fact that though the whole plant and animal world has been ransacked, *no single instance of the transmission of a single acquired character has yet been proved.*[1] It is easy to say that important changes, such as those caused by constant hard exercise or continual laziness, must affect the germs, and through them the offspring. All that is not denied. It is the *particular* effects which are denied. It is not denied, for example, that the exercise which strengthens the arms, or the laziness which injures the legs, *may*, through changes in the nutrition, in some way or other, for good or evil, affect the germs; it is only denied that the arms or legs of the child will be affected more especially than the lungs or the liver. Indeed we may go even further and say that, while it is theoretically possible for acquired characters to affect the germ, this is not *known* to be true; for instance it is not known what effect, *if any*, exercise or laziness has on the germs. All that can be postulated with certainty is that acquired characters do not so affect the germ that the child inherits the precise peculiarity the parent acquired, or anything like it.

"The modern denial of the transmission of acquirements is really

[1] The italics are ours. ED. V. J.

founded on, or should be founded on, the cell theory. Before its enunciation the different parts of the offspring were supposed to be derived from similar parts of the parent. Man, for example, was regarded as an individual. We know now that from the standpoint of heredity he is a community—a community of specialised cells—of which one set, the germs, are specialised for the production of similar cell-communities, just as other sets are specialised for the production of motion or of bile. We have therefore no more reason to suppose that muscle or liver-cells play a part in heredity, than to suppose that the germ-cells play a part in movement or in the production of bile. Formerly, when the transmission of acquirements was believed without question, some remarkable hypotheses to account for the supposed transmission were formulated, occasionally by very distinguished men. Darwin's theory of Pangenesis and Spencer's theory of Physiological Units are examples. These speculations were what are known as "working hypotheses"—hypotheses, that is, in which the amount of theory—perhaps I should say guess-work—is wholly disproportionate to the foundation of fact, and which a more extended acquaintance with the facts usually reveals to be misleading. At the present day, when the transmission of acquirements is generally disbelieved, some working hypotheses as remarkable, but running to the other extreme, have been formulated. Under very high powers of the microscope the nuclear matter of the fertilised germ may be seen to divide, apparently with great accuracy. On this slender foundation Weissmann has built his hypothesis of the continuity of the germ-plasm, adding amazing complications in the way of ids and idants and biophors, hypothetical bearers of heredity. Cheerfully entering into the regions of the unknown and probably the unknowable, he has attempted to explain *how* inborn characters are transmitted. Biologists in larger parts have followed him.

"His speculations, darkening counsel, crop up in every discussion on the subject. As a fact they have no essential bearing on it. The doctrine, first formulated by Galton, that acquired characters are not transmissible is one thing, and is supported by abundant evidence. An attempt, on obscure intracellular grounds, to explain how inborn characters are transmissible, even if it involves the corollary that acquired traits are not heritable, is quite another thing. If successful it would afford additional proof of the former doctrine; its failure does not involve disproof of it. Galton's theory rests on the plain facts that each individual is derived solely from a single cell, the germ; and that there is no evidence that the somatic cells influence the germs in such a special and unlikely manner as to cause the *particular* characters the parent acquired to be reproduced by the children. It does not rest on more or less metaphysical speculations concerning the continuity of the germ-plasm or of ids, idants, biophors, and so forth. It is to be deeply regretted that this red herring of Weissmannism has been drawn across the trail. Weissmann's speculations, obscure in themselves, made more obscure by his methods of demonstration, still more obscure by being constantly emended under the influence of destructive criticism, have drawn many students from the true path, and by their difficulty have discouraged others. The actual issues involved are very simple. Either the germ-cells are influenced by the other cells in particular directions—in millions of particular directions—or they are not. Not a tittle of evidence has been adduced to prove that they are. In other words, no single instance of the transmissions of an acquired character has been recorded.

"The cell theory supplies us with cogent reasons for believing that acquired characters *cannot* be transmitted. To set forth *in extenso* the proofs that they *are not* transmitted would exceed the limits of this article, in which I have still to deal with the large subject of heredity in disease. One or two arguments I may use, however, partly because they have not to my knowledge been developed by other writers, and partly because they seem to me well-nigh decisive. The extra development of the blacksmith's arm is rightly called an acquired trait, since it arises from exercise, from use, not from germinal conditions. But no infant's arm develops into an ordinary adult arm without stimulation similar in kind as that which develops the blacksmith's arm, though less in degree. Therefore almost all that separates the infantile from the ordinary arm is acquired. The same is true of most of the other structures of the body, which do not develop except under the stimulation of use. Thus the brain, heart, lungs, all develop in this manner. Man's physical acquirements are therefore vast. When are any of them transmitted? Every infant has to make afresh under similar stimulation the modifications its parent so laboriously acquired. If it be argued that exercise and use increase, not only the individual's acquirements, but also his power of making them, and that it is the latter which is transmitted, I have only to reply that here is a manifest error. In the passage from infancy to old age the power of making acquirements constantly declines. In the infant it is at a maximum; hence his development into adult man. In the old man it is at a minimum; it is almost lost. Where nothing is acquired nothing can be transmitted. . . .

"Mutilations are sometimes instanced by medical men as affording examples of the transmissions of acquirements. Seeing, as they daily do, injuries caused by accident, disease, and the surgeon's knife, medical men should be peculiarly qualified to judge. In a million instances there is no apparent transmission. In the millionth and one a man with an amputated leg has perhaps a son with a deformed toe; thereupon the transmission of an acquirement is triumphantly proclaimed. There is, however, such a thing as mere coincidence. It is forgotten that though every mother loses her hymen and nearly every terrier his tail, yet congenital absence of hymen and tail is still so rare as to be regarded with extreme suspicion. Maternal impressions are much relied on. A mother sees a mutilated or malformed man, and it happens her child is malformed. Here again the element of coincidence is forgotten; every woman sees malformations during her pregnancy, but very few have malformed children. The children of nurses and lady doctors are not peculiarly liable to malformations. Moreover the mother gets a mental impression; the child something quite different, a physical malformation; therefore in any case there is no transmission of the mother's acquirement. Often, as in the case of gout, diathesis is confused with disease. Thus father and son both may have an inborn (and transmissible) incapacity to resist the bacillus of tuberculosis. They both get infected. Thereupon the son is supposed to have inherited consumption from the father. He merely inherits the incapacity to resist the bacillus. The acquirements, infection, and disease come later. Like the parent he acquires them for himself. . . .

"If, as is alleged by most medical men, the effects of disease are transmissible, then these effects must accumulate generation after generation. The son must start with the parent's constitution plus the effects of the

son's disease, and so on. It is plain, on this hypothesis, that a race afflicted by any disease should undergo evolution or degeneration—evolution if the disease tends to strengthen the individual against subsequent attacks, as by conferring immunity, degeneration if it tends to weaken him. On the other hand, if the effects are *not* transmissible, then a race afflicted by deadly disease would equally change, would undergo evolution—but not degeneration. For men differ in their inborn power of resisting disease. Disease is a selective agency. It weeds out the less resistant to it, leaving the race to the more resistant. Therefore on this hypothesis a race afflicted by disease should grow more and more resistant to it. Moreover, since resisting power against one disease does not imply resisting against any other—for example, since resisting power against phthisis does not imply resisting power against malaria—every race should grow resistant only against the particular diseases by which it is afflicted. . . .

"All the races of mankind sprang from a common origin—Adam and Eve, or a species of lower animal, it matters not which. But they have diverged vastly. There are big races and small, white and black, woölly and straight-haired, and so forth. Among other particulars, races differ greatly in their powers of resisting this or that disease. For example, Negroes are incomparably more resistant to malaria than Englishmen, who, on the other hand, are as highly resistant to tuberculosis when compared to Australian blacks. *It is most significant that every race is resistant to every deadly disease strictly in proportion to its past experience of it.* Englishmen and Polynesians, when emigrants in countries where malaria, typhoid, or dysentery are very rife, suffer much more than the native inhabitants. When small-pox, measles, tuberculosis, syphilis, scarlatina, plague, or yellow fever overpass their normal boundaries and attack the inhabitants of countries where they were previously unknown, or little known, they are destructive to a very unusual degree, as in Polynesia. Dr. Russell mentions an interesting example. Vaccinia is presumably a very attenuated form of variola. For centuries and until very recently we were scourged by small-pox; to the Esquimaux it was unknown. Most of us are able to recover even from small-pox; the Esquimaux perish even from vaccinia.

"One attack of many diseases confers on the *individual* increased resisting power, or even complete immunity, against subsequent attacks of the same disease, as in the case of scarlatina and chicken-pox. There is a consensus of medical opinion that this increase of resisting power in the parent is transmitted to some extent to the child, and that thus, from its accumulation during generations, arises increased resisting powers in the race. But there are some diseases, of which tuberculosis is an example, against which no resisting powers can be acquired. One attack of tuberculosis, a most death-dealing disease, weakens rather than strengthens against subsequent attacks. If, therefore, the acquired effects of disease are transmissible, races afflicted by tuberculosis should grow less and less resistant to it. The exact opposite is true. For very many centuries tuberculosis has ravaged the Old World, especially such crowded parts of it as England. But Englishmen now increase and multiply in cities and towns, the natural breeding-places of tuberculosis, whereas, under like conditions, the inhabitants of the New World, where tuberculosis was unknown till recently, perish. When infected with tuberculosis by white men they tend to extinction everywhere, even in rural districts. Plainly

there has been great evolution, but as plainly it has resulted solely from the survival of the fittest, not in the least from the transmission of acquirements. On the other hand, there are some diseases against which immunity may be acquired, but which, though prevalent, are not deadly. Chicken-pox is an example. Against them no evolution is observable, for chicken-pox is as severe in type when attacking Polynesians as when attacking Englishmen. In this case, in the absence of selection, the acquirement of immunity has not tended to render the race more resistant. It is clear, then, that races grow resistant, not through the transmission of acquirements, but solely by the survival of the fit.

"A study of alchohol and other narcotics is instructive in this connection. Indulgence in any of them—alchohol, for example—increases as a rule the desire for indulgence. The more a man drinks, the more within limits does he crave for drink. But the limits vary widely. In some men experience of drink quickly awakens a desire for deep indulgence. They have the alcohol diathesis, an inborn trait. They become drunkards unless withheld by moral or other deterrents. In other men experience of drink, no matter how prolonged, awakens nothing more than a desire for moderate indulgence. They have not the drink diathesis. They are temperate without effort all their lives. The reader probably belongs to the latter category; he is not tormented by a craving for drunkenness; he is therefore temperate, not because he resists temptation, but through lack of it. Yet even in his case indulgence has increased his desire for alcohol up to a certain point. Now this increased desire for drink, this increased capacity for enjoying it, this weakened capacity for resisting it, which springs from indulgence, is an acquired trait, and therefore, if acquired traits are transmissible, the race which has longest used drink should be the most inclined to drunkenness of all. The son would inherit the father's capacity for enjoying drink, plus the increment caused by the father's drinking; the grandson would inherit the son's capacity, plus the increment caused by the son's drinking; and so on. It is evident that, given a sufficient supply of alcohol, the desire would at length grow so intense and uncontrollable that the race would be exterminated. On the other hand, since men differ in the intensity with which they crave for drink; since those who crave most, being exposed to the greater temptation, *as a rule* drink most; since alcohol is a poison which poisons most those who drink most; it must follow, if acquired characters are *not* transmitted, that this elimination of the unfittest and survival of the fittest will result at length in a lessened proneness to deep indulgence, to the elimination, in fact, of the drink diathesis, to the evolution of a more temperate race.

"What are the facts? Neglecting temporary fluctuations, generally of minor importance, caused by changes in fashions, or morals, or in the price of alcohol, &c., every race that has access to abundant supplies of alcohol is temperate strictly in proportion to its past experience of the poison. There has, in fact, been no transmission of an acquirement, but merely a great survival of the fittest. The Jews and the inhabitants of the wine countries generally, who have been afflicted by alcohol for thousands of years, are the most temperate peoples on earth. North Europeans, who have had a less abundant supply, and have been less afflicted and for a shorter period, are much more drunken. Savages, who have never been able to manufacture alcohol, are so inclined to drunkenness, that in all parts of the

world, from pole to pole, when given the opportunity, they drink to extinction and perish. They are as little capable of persistence in the presence of strong modern solutions of alcohol as they are of persistence in towns in the presence of tuberculosis. It is the fashion to attribute national insobriety to all sorts of causes. To climate,—but savages in all climates are drunken, whereas Jews are sober. To strength of beverages, — but Wellington's English were drunken in the Peninsular when the native soldiers were sober; savages, if they have the opportunity, get drunk on the lightest beverages; the sober races of the present time, Jews, Greeks, South Germans, and Frenchmen, Italians, Spaniards, and Portugese, were anciently drunken when their wines were no stronger. To civilisation,—but North Europeans are more civilised but more drunken than South Europeans; West Africans, savages of a very low type, who have long manufactured palm wine, are conspicuously more temperate than other savages. Parental or ancestral drunkenness,—but savages whose parents and ancestors never had any drink are the most drunken of all. Education,—what is there in the education of South Europeans and Jews which renders them so superior in this particular to North Europeans? Temperament,—but how did differences in temperament arise if not through evolution? Advance what other hypothesis one will, and there are numerous exceptions, this theory of alcoholic evolution. which is in accordance with all we know of evolution under natural and artificial conditions, alone covers all the instances. Surely, then, there is no escape from the conclusion that all races that have had access to alcohol, and are temperate, have become so through evolution—through the elimination of the unfit, the innately drunken.

"Opium has been used for hundreds of years in India, for two centuries in China, for three or four decades in Burma. The evidence given before the late Royal Commission on Opium showed that opium is never, or very rarely, taken to excess by the natives of India; it is frequently taken to excess in China; the Burmans take it in such excess and perish in such thousands of it that we, the English rulers of the country, are obliged to prohibit the use of opium in Burma to Burmans alone, while permitting it to all other nationalities; just as in Canada and Australia we are obliged to prohibit the use of alcohol to the natives alone, while permitting it to all other peoples.

"Were acquirements transmissible, races that had longest used tobacco should crave most for it. As a fact, races to which it is newly introduced crave just as much for it as those who have used it longest. On the other hand, like chicken-pox—but unlike tuberculosis, malaria, alcohol, opium —tobacco is not death-dealing. As a consequence it is not a cause of evolution; races which have longest used it crave for it as much as those to which it has been newly introduced."

TUBERCULOSIS IN THE GOAT.

FEMALE goat seized at slaughter-house at Lyons as unfit for human food. Tuberculous lesions generalised in proper sense of the word were specially important in the two great splanchnic cavities. In the thoracic cavity the lungs, the pleural and pericardiac serous membranes, and the glands were invaded by tuberculous nodules. The pulmonary parenchyma was crammed

with tubercles of different volume, ranging from a millet-seed to a pea; they were found in abundance under the pleura, from the surface of which they stood out, giving to the finger the sensation of a hard body embedded in the parenchyma. These tubercles could be easily cut, and when an incision was made they showed themselves formed of caseous contents, homogeneous, of a light yellow colour, and with a peripheric envelope, more or less thick, of whitish fibrous tissue. The pulmonary pleura presented, on the right only, some false membranes of a greyish yellow colour, moist, not thick, corresponding to lesions of the parietal pleura of the right side; these consisted of a very marked thickening of the serous membrane in the farm of sessile patches, whitish in colour, of variable extent, irregular borders presenting on their surface little tubercles. When cut, these patches showed themselves formed of hard fibrous tissue, of brilliant aspect, pearly white, sprinkled with caseous miliary foci. The pleural lesions were especially marked at the level of the apex of the heart and also at the level of the right fleshy portion of the diaphragm, where, on a space 5 to 6 centimetres broad, the costal and diaphragmatic pleuræ covered with lesions, were quite adherent. The lesions of the mediastinum were specially abundant in the lower anterior portion, where they formed by their union a sort of necklace, uniformly hard, 7 to 8 centimetres long, the central portion of which presented numerous caseous tuberculous foci. The bronchial and mediastinal glands were invaded; the latter formed a single mass, 8 centimetres long, with a maximum diameter of 4 centimetres. The glandular tubercular foci differ somewhat from those of the parenchyma by the presence of calcareous grains in their substance.

At the level of the pillars of the diaphragm there existed a continuous tuberculous mass, of the volume of the two fists, formed by the close union of the upper posterior portion of the right lung, of the front upper portion of the liver, and of the front portion of the right kidney; at this level all trace of diaphragmatic separation had vanished. On incision it was observed that this mass resulted from the agglomeration of tuberculous lesions, the softening of which was very far advanced. Two cavities were found there, attaining the dimensions of a pigeon's egg, and enclosing light yellow pus, homogeneous, and semi-liquid. The portions of lung and liver entering into the constitution of this tumour had lost all normal structure; the hepatic parenchyma was replaced by whitish fibrous tissue sprinkled with caseous foci; in the vicinity were found some tubercles having their seat in the healthy tissue.

The liver was covered on its two faces with tuberculous lesions, lodged in the (considerably thickened) Grisson's capsule. These lesions appeared under the form of hemispheric tubercles of varying volume, about as broad as an English farthing on an average. The parenchyma was easily separated from its envelope, the latter retaining all the lesions which had set their impress on the hepatic tissue in the form of shallow depressions pretty nearly circular. On its anterior surface the liver was closely joined to the peritoneal covering of the diaphragm. The retrohepatic glands were completely invaded by tuberculous lesions infiltrated with calcareous matter. The spleen presented tuberculous lesions, of the volume of a hazel-nut, only in the thickness of the peritoneal covering which enveloped it; by its anterior surface at the level of its upper border it was adherent to the posterior surface of the diaphragm. The right kidney alone showed a few tubercles lodged in its capsule at the level of its anterior portion; the con-

nective tissue which surrounded it helped to form the tuberculous mass mentioned above. The ovaries were healthy. The epiploon, the mesentery, the broad ligaments were sprinkled with tubercles of varying volume, the same in structure as those of the lump. The parietal peritoneum, thickened and whitish, was covered with tubercles of the size of a large pea, especially abundant on the posterior surface of the diaphragm at the level of the liver and of the spleen. The mesenteric glands were completely invaded.

To the right, at a point opposite the twelfth rib, under the panniculus carnosus, which was very slender at this place, there was observed a hemispheric projection of the breadth of a florin, presenting on its surface little yellowish foci visible by transparence. There was a tuberculous lesion, not softened, beginning in the thoracic cavity immediately above the tuberculous mass described above, and insinuating itself into the eleventh intercostal space. There is no doubt that this lesion would in the long run have invaded the skin and opened up at the extremity. Important lesions were observed in the mammary parenchyma. This tissue was crowded with caseous miliary tubercles. The mammary and precrural glands were tuberculous. The tuberculous nature of these lesions was clearly established by bacteriological examination and intravenous inoculation into the rabbit.

(*Recueil de Méd. Vét.*).

Reviews.

VETERINARY INSTRUMENTS, 1900: H. HAUPTNER, BERLIN.

We cannot speak in too high terms of the catalogue of veterinary instruments just published by the well-known Berlin manufacturer. The catalogue contains all the veterinary instruments at present made, it is printed in three languages—German, French, and English—and contains illustrations of a very large number of instruments. In the preface the publishers make the following explanatory remarks:—

"The beginning of the new century gives us an occasion to cast a retrospective view upon the position of science, art, and industry as it stood a hundred years ago, to think of the development in this past period, and to describe the present standpoint.

"A hundred years ago there existed almost nothing of a technical line such as referred to on the following pages. Indeed, after the establishment of the Veterinary Colleges at the end of the eighteenth century, veterinary surgery was in its first stages, and the few instruments then required by the surgeons were manufactured by cutlers and farriers. Not until the middle of the century, when veterinary surgery commenced to more seriously develop, a demand for veterinary instruments became more noticeable, which fact caused the undersigned firm, which was established in 1857, to devote themselves exclusively to the manufacture of veterinary instruments.

"Division of labour in all lines of human activity has been the key to the successes of the nineteenth century, and thus the idea of the founder of H. Hauptner's Instrument Manufactory, to devote himself exclusively to the service of Veterinary Surgery, has proved to be successful, and has led

from small commencements to the development of a special industry which enjoys general recognition and esteem. Messrs. H. Hauptner have always endeavoured with great zeal to answer the increased expectations of science, which so powerfully developed especially towards the end of the century, and they have drawn into their province all the articles required by Veterinary Surgeons for the great variety of purposes in healing all kinds of animal diseases, for exploring and remedying infections, epidemics, for the examination of animal food, for breeding purposes and for instruction.

"In order to give an account of the position of this special line at the beginning of the new century, Messrs. Hauptner—as is their custom to give an annual report with regard to the latest improvements and new apparatus in their line—beg to present the Veterinary Surgeons of all countries with a new complete catalogue in German, French, and English languages, which is published in 25,000 copies, and forwarded free of charge.

"The publishing of this catalogue in three languages is due to an urgent necessity, as during the last ten years the foreign demand for articles of Hauptner's make has experienced an extraordinary increase, and as the Veterinary Surgeons in all civilised countries have more and more recognised the advantages connected with the direct purchase from our special manufactory. The consequently much more extensive sales, together with the excellent manufacturing arrangements of the firm, have permitted the latter not only to keep, in spite of the enormous rise of the raw materials, out of the general increase of the prices for Hauptner articles, but enabled them even to reduce the prices of a great number of their instruments. 'Every piece warranted' is the maxim of the firm, and as therefore only the very best raw materials are used, all buyers, at home and abroad, are offered the best guaranty for the quality and superiority of any article they may choose to purchase."

The printing is good, the paper excellent, and the illustrations all that can be desired. In short, this catalogue will form a very valuable addition to the Veterinary Surgeon's library.

Not the least interesting part of the catalogue is that devoted to photographic reproductions of views of the world's Veterinary College at the commencement of the twentieth century. The views are supplemented by short descriptive accounts, the whole forming a means by which we gather a very good idea of the teaching of veterinary science in various countries.

From reproductions of photographs of various departments of the enormous factory of Messrs. Hauptner, we gain some notion of what the largest instrument factory of the world is like.

Though we have had to wait some time for this long-promised production, its advent justifies the delay and is eminently gratifying.

The "Huish" Veterinarian's Perpetual Diary and Visiting List.

C. H. Huish, the well-known instrument maker, has placed the veterinary profession under a debt of gratitude by the publication of an exceedingly handy veterinarian's diary and visiting list. He has in the main followed the plan adopted in all the best medical diaries, only making such modifications as are necessary to the veterinary surgeon. Refills with quarterly ruling are also supplied at the very moderate cost of 6d. each. In addition to the ordinary visiting list, there are sections for

memoranda, notes of instruments, slings, &c. lent, personal memoranda, and reminders of the meetings of veterinary associations. An additional refill (B) contains sections for parturitions, tuberculin testing charts, certificates as to soundness, and consultant's records. We can conscientiously recommend any veterinary surgeon on the look-out for a convenient diary to try the "Huish."

Experiments on Living Animals.

The return showing the number of experiments performed on living animals during the year 1899 is now to hand. Dr. G. D. Thane in his report states that the number of licensees was 250, of whom 72 performed no experiments. He further calls attention to the fact that tables I. and II. afford evidence—

1. That licenses and certificates have been granted and allowed only upon the recommendation of persons of high scientific standing;
2. That the licensees are persons who, by their training and education, are fitted to undertake experimental work, and to profit by it;
3. That all experimental work has been conducted in suitable places.

This is apparently pointed out as an answer to some of the accusations made by the antivivisectionists, as also, no doubt, is the following statement:—

"During the year the usual inspections of registered places have been made by Dr. Poore, Sir James Russell, and myself, and have been severally reported. These inspections have generally been made without notice, the only exceptions in this respect being in cases where it was desired for some reason to meet the licensees at their registered places. I have on several occasions seen animals under experiment, always in a state of profound anæsthesia. The animals being experimented on under certificates A and B have been carefully examined, and among the large number that I have seen there have been none showing any signs of pain. The guinea-pigs and rabbits for example, which have been inoculated under certificate A for the testing of antitoxins for the diagnosis of disease, and so forth, are generally indistinguishable from the untouched animals in stock; and in most cases that have come under my notice of animals operated on under certificate B, it would be quite impossible, apart from the scar or healing wound, to recognise that anything had been done to them.

"I have found the licensees in all cases desirous of acting in strict accordance with the spirit as well as the letter both of the Act and of the special conditions attached to their licenses; and the instances of irregularity which it has been my duty to bring to your notice may be termed accidental, having been due either to misunderstanding or inadvertence. They are as follows:—

"A licensee who held certificates A and E (dispensing with anæsthetics) performed two experiments which were required in the discharge of his duties as Medical Officer of Health, but which were not covered by the terms of his certificates. He reports that the animals suffered no pain, and the failure to apply for the proper certificates was an oversight, for which an appropriate caution has been administered.

"In connection with a pathological research carried on under his direction by a gentleman who held no license, a licensee made himself responsible for a few inoculations under anæsthetics on kittens, although he did not hold the necessary special certificate for those animals. The error was unintentional, and the experiments were duly reported. The licensee was censured for his carelessness.

"A licensee in the early part of the year performed two diagnostic inoculations without authority, in the belief that his certificate A, which expired at the end of 1898, was still in force.

"In two cases licensees have allowed persons who did not hold licenses to perform experiments with them, or under their direction, in each instance on three animals. The licensees have been severely censured. It must be clearly understood that licensees cannot delegate their powers to others, or authorise non-licensed persons to perform experiments for them; and steps are being taken to bring this prominently to the notice of licensees and the authorities controlling registered places."

An examination of the tables shows that the number of experiments performed under an anæsthetic is 1656; whereas the number of simple inoculations, hypodermic injections, and similar proceedings performed without anæsthetics amounted to 6813. These figures apply to England and Scotland only. In Ireland the experiments performed were 227 in number; 79 being under license alone, and 148 under certificates. W. Thornley Stoker, Inspector for Ireland, reports that—

"The experiments appear to have been of a useful character, and either painless, or painful only to a slight extent. The bulk of them were inoculations for the diagnosis of diseases, such as canine rabies and tuberculosis."

A Surgical Operating Table for the Horse. By Jno. A. W. Dollar, M.R.C.V.S. Edinburgh: David Douglas. 2s. 6d. net.

It must be confessed that the methods usually adopted to control horses under operation by veterinary surgeons in this country are not all that could be desired. Indeed, it is not putting the matter too strongly to say that they are eminently unsatisfactory. No one casts a horse without feeling that an accident may very readily occur, and the wise among us point out such possibility to the owner of the animal to be cast. Several forms of operating tables have been in use on the Continent for a good many years. Some of them—the older forms generally speaking—are clumsy and open to much improvement. Others are triumphs of mechanical skill. Mr. Dollar, in the little book at present before us, describes and illustrates the working of one of the most satisfactory models of operating table, viz., that of M. Vinsot, of Chartres.

Mr. Dollar, in pointing out the dangers of the old method of casting horses for operation, calls attention to what he calls a peculiar nervous shock which sometimes follows the throwing down of high-couraged horses. In speaking of the administration of anæsthetics without control, the writer gives a graphic description of what must have been a remarkable, and to those within the radius of the subject's operations a somewhat uncomfortable scene. Chloroform was being administered to a horse for the purpose

of enabling him to be shod. The animal broke loose, scattered men and implements far and wide, displaced heavy anvils, broke windows, threw bars of iron in all directions, and pushed down a 4½ inch brick wall. A shell from a big gun is a lamb by comparison!

The writer hits rather hard at the profession in this country when he says,—"Considering the fact of England's supremacy as a stock-breeding country, and the well-earned reputation of English veterinary surgeons for general knowledge of animals and practical skill in their profession, it is not a little surprising that surgical technique and the development of aids to practice have so far lagged behind, and that for many greatly demanded improvements we have to thank foreign colleagues. This is strikingly true in regard to improved operating tables, of which, on the Continent, several have been produced, and, moreover, have come into fairly common use. We in this country seem to have been too much of opinion that new ideas would 'not pay,' or, still more, were 'not practical.' We have therefore waited for the fullest demonstration of their value abroad before accepting them at home, forgetting that the rewards of enterprise are for the first in the field."

The evolution of the operating table is treated of shortly, illustrations being given of Davian's and the German tables. The apparatus of Vinsot is very completely described and illustrated, both in its earlier form and in the improved and more satisfactory form of to-day. One of the outstanding features of the present model is the ease with which by its means the horse can be made to assume any position for operation, and this apparently by merely working a lever.

It is rather difficult to see why an operation for removing scars from blemished knees should find a place in a work describing an operating table. Evidently it has been inserted by way of giving an example of the class of work possible by the aid of such an apparatus.

Mr. Dollar is to be congratulated upon the excellence of the photographs used by way of illustrations, and the publishers also deserve praise for the quality of the printing and paper. If the book induces some, however few, veterinary surgeons to set up a table, it will not have been written in vain.

BOARD OF AGRICULTURE. ANNUAL REPORT OF PROCEEDINGS UNDER THE DISEASES OF ANIMALS ACTS, &C. FOR THE YEAR 1899.

The annual reports are always pregnant with much interest for the veterinarian; and this year they are no exception to the rule. In the report by the chief veterinary officer (Mr. A. C. Cope) is given a very lucid historical account of rabies, which will be read with edification by all into whose hands it happens to fall. We are reminded that there is no disease which possesses greater antiquity. It is probable that ancient peoples were cognisant of the disease, and appear to have had no less dread of it than we ourselves of the present day. Celsus of old seems to have made this disease his particular study, and even in his time it seems to have been generally accepted that the saliva alone contained the morbific principle. The earliest mention of the disease as occurring in this country is, according to Dr. Fleming, contained in the laws of Howel the Good of

Wales, which were revised in A.D. 1026. Rabies occurred in Flanders, Turkey, Hungary, and Austria in 1586, and in 1604 caused considerable alarm in Paris. It prevailed in England in 1734 and 1735. In 1752 several cases were reported at St. James' in London. A general outbreak continued until 1762. Great alarm was caused in Lancashire by the disease appearing in 1774. The doubt that rabies can and does occur in outbreaks among deer has been removed of late years. The question was set at rest in 1887 when an extensive outbreak occurred among the deer in Richmond Park, which resulted in the death of no less than 257 animals. It was first suspected that death might be due to poisonous food. Some of the deer in the early stages of the disease were brought to London and placed in boxes at the Royal Veterinary College and the Brown Institution. Professor Victor Horsley, at that time director of the Brown Institution, inoculated some rabbits, which, after the usual interval, developed symptoms of paralytic rabies. In order to prove conclusively that the disease was rabies, a terrier was inoculated with some of the material taken from the spinal cord of the rabid rabbits, and after the usual incubative period rabies developed in the inoculated dog. Rabies appeared among sheep in Berkshire in 1856. Another serious outbreak occurred in Lancashire in 1864, when thousands of dogs were said to have been destroyed in Liverpool alone. In 1866 the disease was very widely spread, especially in Lancashire. In 1871 outbreaks occurred in some of the hunting kennels, especially the Quorn and the Albrighton packs. Mr. Cope remarks that when the disease assumes the "dumb" form its true nature is frequently overlooked, even by professional men, while the owner is generally led to suppose, from the appearance of the animal, that the inability to shut the mouth is due to the presence of a foreign body in the throat, or to some affection of the throat itself.

The reporter goes on to say that, taking into consideration the number of human beings who year after year have fallen victims to hydrophobia during this century, and even a longer period, it seems very remarkable that the public, through the medical profession, have not years ago insisted upon the eradication of rabies from the point of view of public health. And, indeed, we cannot say less than that it is remarkable that something has not been done when we learn that during the last fifty-one years the number of persons reported to have died of hydrophobia amounts to what Mr. Cope justly calls "the appalling total of 1112."

As a disease of animals, we are told, rabies is of little importance to dog-owners as a whole and certainly not to the agriculturist. The number of dogs attacked in this country has always been small, compared with other infectious diseases of animals. The very gratifying announcement is made that there is now every reason to believe that rabies has been extintinguished in Great Britain, the last case confirmed by the Board's veterinary officers having occurred in Glamorganshire in November 1899, while in those countries in which it has from time immemorial been most prevalent, viz., the Ridings of Yorkshire, Lancashire, and Staffordshire, no case has occurred since December 1898. This announcement is the one part of the report which gives historic interest to the whole, and which justifies our somewhat lengthy quotations.

Rabies having been stamped out, the next important question is how is it to be kept out of the country. With the object of preventing its re-

introduction the Board have issued orders restricting the importation of dogs from abroad by requiring their detention and isolation for a period not exceeding six months, which may be considered the outside period of incubation of the disease. They have also taken steps of a similar nature to prevent the introduction of the disease from Ireland, where unfortunately it is still reported to exist. It is very pleasing to be told that the extinction of rabies in Great Britain has been largely due to the aid given to the Board by the veterinary profession, and that it affords a striking and practical illustration of the benefits to be derived from the application of veterinary science in connection with the prevention and extinction of those diseases of animals which are communicable to man.

Concerning foot-and-mouth disease, we are told that only three suspected outbreaks were reported during the year 1899, and in each case the disease was stated to have appeared among sheep. Although Great Britain has been so comparatively free from the disease, it has been extremely prevalent on the Continent of Europe, especially in Austria-Hungary, France, Germany, Holland, and Russia. French authorities, it appears, are at last beginning to awaken to the importance of endeavouring, in some way, to check the persistent visitations of foot-and-mouth disease with which their country is afflicted.

Although eleven suspected outbreaks of pleuro-pneumonia were reported during 1899, as a matter of fact not a single case was detected in Great Britain during the year. Pleuro-pneumonia may probably now, like cattle plague, be regarded as an extinct disease in this country. It is unfortunate that, though the number of outbreaks of swine fever has decreased from 2514 in 1898 to 2322 in 1899, it cannot be said that the year's operations have been attended with the good results hoped for.

Glanders is also a disease concerning which an unfavourable report has to be made. There has been not only an increase in the number of centres and of horses attacked during 1899, as compared with the previous year, but there is also a wider distribution of the disease, as shown by the number of counties infected in Great Britain having increased from 30 in 1898 to 35 in 1899. Mr. Cope finds it no easy matter to account for this increase. It is highly probable that the increased movement of horses may be one if not the cause. If glanders is to be stamped out, says the chief veterinary officer, it is quite certain that some restriction must be put upon the movement of those horses which become infected as a result of their association with diseased horses.

There has been little or no variation in the prevalence of anthrax during past years, the number of outbreaks during 1899 being nearly the same as in previous years, but there has been a considerable increase in the number of swine attacked.

The report concerning sheep scab is favourable. There has been a marked falling off in the number of outbreaks, and of sheep affected, although the number of counties from which they were received was the same as in 1898. It is not improbable that the reduction has followed upon and been due to the provisions of the Sheep Scab Order issued by the Board in 1898.

CONTAGIOUS DISEASES ANIMALS ACTS, 1864 AND 1899.

SUMMARY OF RETURNS OF OUTBREAKS for the Four Weeks ending 14th July 1900.

ENGLAND AND WALES.

Swine Fever.	Glanders (including Farcy).	Rabies.	Anthrax.	Sheep-Scab (for month of June).
Outbreaks 246 Slaughtered 2234	Outbreaks 73 Attacked 111	None.	Outbreaks 16 Attacked 32	Outbreaks 10
SCOTLAND.				
Outbreaks 2 Slaughtered 23	Outbreaks 0 Attacked 5	None.	Outbreaks 12 Attacked 28	None.
IRELAND.				
Outbreaks 24 Slaughtered 372	None.	Dogs Attacked 1 Other Animals 0 Destroyed 0	None.	Outbreaks 11

Communications, Books, Journals, &c., Received.

Agricultural Journal (Cape of Good Hope); Berliner Thierärztliche Wochenschrift; La Clinica Veterinaria (Milan); Deutsche Thierärztliche Wochenschrift; Tannoform in Veterinary Medicine (March); The Sanitary Journal; Scottish Medical and Surgical Journal; Veterinary Record; La Riforma Veterinaria; Le Mois Scientifique (Paris); L'Echo Vétérinaire (Liège); Annales de Médecine Vétérinaire (Brussels); Johns Hopkins Hospital Reports; Journal of Comparative Medicine and Veterinary Archives; Recueil de Médecine Vétérinaire; Gazette Médicale de Paris; Modern Medicine; Johns Hopkins Hospital Bulletin.

We regret that, owing to great pressure, we are unable to publish this month several important communications, &c. received from contributors.